P7H55/USB3

Motherboard

E5833

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Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

REACH

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at http://green.asus.com/english/REACH.htm.

DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

DO NOT throw the mercury-containing button cell battery in municipal waste. This symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adpater or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
- The optical S/PDIF is an optional component (may or may not be included in your motherboard) and is defined as a CLASS 1 LASER PRODUCT.

INVISIBLE LASER RADIATION, AVOID EXPOSURE TO BEAM.

- Never dispose of the battery in fire. It could explode and release harmful substances into the environment.
- Never dispose of the battery with your regular household waste. Take it to a hazardous material collection point.
- Never replace the battery with an incorrect battery type.

- RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
- DISPOSE OF USED BATTERIES ACCORDING TO THE ABOVE BATTERY-RELATED INSTRUCTIONS.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product introduction**

  This chapter describes the features of the motherboard and the new technology it supports.

- **Chapter 2: BIOS information**

  This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS websites**

   The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional documentation**

   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.

DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to help you complete a task.

Typography

Bold text	Indicates a menu or an item to select.
Italics	Used to emphasize a word or a phrase.
<Key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key. Example: <Enter> means that you must press the Enter or Return key.
<Key1>+<Key2>+<Key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: <Ctrl>+<Alt>+<D>

P7H55/USB3 specifications summary

CPU	LGA1156 socket for Intel® Core™ i7 / Core™ i5 / Core™ i3 / Pentium™ Processors Supports Intel® Turbo Boost Technology * The Intel® Turbo Boost Technology support depends on the CPU types. ** Refer to www.asus.com for Intel CPU support list
Chipset	Intel® H55 Express Chipset
Memory	4 x DIMM, max. 16GB, DDR3 2200(O.C.)* / 2000 / 1866 / 1600 / 1333 MHz, non-ECC, un-buffered memory Dual channel memory architecture Supports Intel® Extreme Memory Profile (XMP) * Hyper DIMM support is subject to the physical characteristics of individual CPUs. Some hyper DIMMs only support one DIMM per channel. Please refer to Memory QVL for details. ** Refer to www.asus.com or this user manual for the Memory QVL (Qualified Vendors Lists)
Expansion Slots	1 x PCI Express 2.0 x16 slot (blue) 1 x PCI Express 2.0 x16 slot (@ x4 speed, 2.5GT/s, black) 2 x PCI Express 2.0 x1 slots (2.5GT/s) 2 x PCI slots
Multi-GPU support	Supports ATI® Quad-GPU CrossFireX™ Technology
Storage	Intel® H55 Express Chipset: - 6 x SATA 3.0 Gb/s ports
LAN	Realtek® 8112L Gigabit LAN controller featuring AI NET2
USB	10 x USB 2.0/1.1 ports (4 ports at mid-board, 6 ports at rear panel) 2 x USB 3.0/2.0 ports (2 ports at back panel)
Audio	VIA® 1708S 8-channel High Definition Audio CODEC - Optical S/PDIF out port at back I/O - Support Jack-Detection and Multi-Streaming

(continued on the next page)

P7H55/USB3 specifications summary

ASUS Unique Features	**Hybrid Processer:** - ASUS TurboV EVO, TurboV, Auto Tuning **Hybrid Switch:** - Turbo Key II **Hybrid OS:** - Express Gate **ASUS Exclusive Features:** - MemOK! - ASUS EPU **ASUS Quiet Thermal Solution:** - ASUS Fanless Design: Stylish Heatsink Solution, MOS Heatsink - ASUS Fan Xpert **ASUS EZ DIY:** - ASUS O.C. Profile - ASUS CrashFree BIOS 3 - ASUS EZ Flash 2 - ASUS My Logo 2 - Multi-language BIOS
ASUS Exclusive Overclocking Features	**Precision Tweaker 2:** - vCore: Adjustable CPU voltage at 0.00625V increment - vIMC: Adjustable IMC voltage at 0.00625V increment - vDRAM Bus: 64-step DRAM voltage control - vPCH: 36-step chipset voltage control - vCPU PLL: 56-step reference voltage control **SFS (Stepless Frequency Selection):** - Internal Base Clock tuning from 80 MHz up to 500 MHz at 1MHz increment - PCI Express frequency tuning from 100MHz up to 200MHz at 1MHz increment **Overclocking Protection:** - ASUS C.P.R.(CPU Parameter Recall)
Back Panel I/O Ports	1 x PS/2 keyboard port (Purple) 1 x PS/2 mouse port (Green) 1 x S/PDIF Out (Optical) 1 x RJ45 port 6 x USB 2.0/1.1 ports 2 x USB 3.0/2.0 ports 8-channel Audio I/O

(continued on the next page)

P7H55/USB3 specifications summary

Internal I/O Connectors	2 x USB connectors support additional 4 USB ports 6 x SATA 3Gb/s connectors 1 x 4-pin CPU Fan connector 1 x 3-pin Chassis Fan connector 1 x 3-pin Power Fan connector 1 x Front panel audio connector 1 x S/PDIF Out header 1 x CD audio in 1 x 24-pin EATX Power connector 1 x 4-pin ATX 12V Power connector 1 x System Panel 1 x MemOK! button 1 x COM connector
BIOS Features	16 Mb Flash ROM, AMI BIOS, PnP, DMI2.0, WfM2.0, SM BIOS 2.5, ACPI 2.0a
Manageability	WfM 2.0, DMI 2.0, WOL by PME, WOR by PME, PXE
Accessories	2 x Serial ATA 3.0Gb/s cables 1 x I/O shield 2 in 1 Q-connector (USB, System panel; Retail version only) User's manual
Support DVD Contents	Drivers ASUS Utilities ASUS Update Anti-virus software (OEM version)
Form Factor	ATX Form Factor, 12”x 8.6” (30.5cm x 21.8cm)

***Specifications are subject to change without notice.**

Chapter 1

Product introduction

Thank you for buying an ASUS® P7H55/USB3 motherboard!
Before you start installing the motherboard, and hardware devices on it, check the items in your motherboard package. Refer to page ix for the list of accessories.

If any of the items is damaged or missing, contact your retailer.

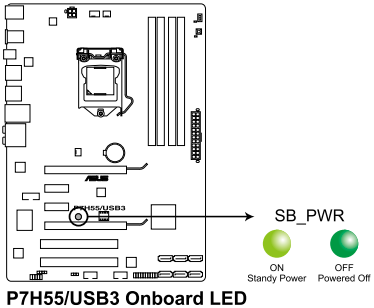
1.1 Before you proceed

Take note of the following precautions before you install motherboard components or change any motherboard settings.

- Unplug the power cord from the wall socket before touching any component.
- Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, to avoid damaging them due to static electricity.
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
- Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.

Onboard LED

The motherboard comes with a standby power LED that lights up to indicate that the system is ON, in sleep mode, or in soft-off mode. This is a reminder that you must shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED.



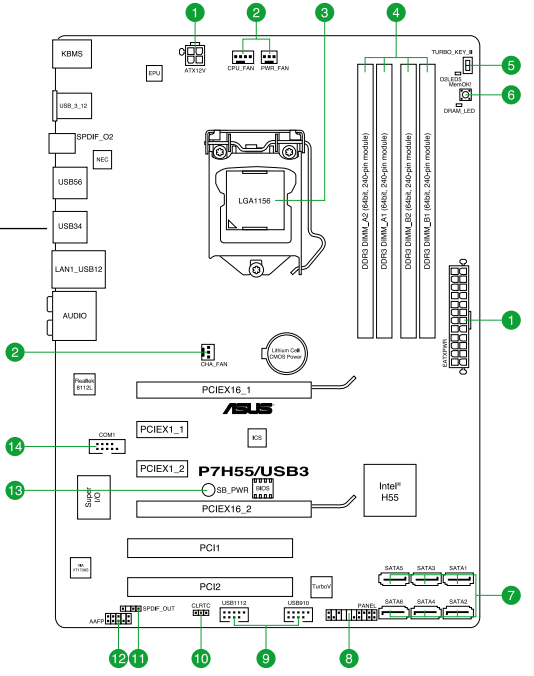
P7H55/USB3 Onboard LED

1.2 Motherboard overview

1.2.1 Motherboard layout

Ensure that you install the motherboard into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis.

Place this side towards the rear of the chassis.



Place six screws into the holes indicated by circles to secure the motherboard to the chassis. DO NOT overtighten the screws! Doing so can damage the motherboard.

1.2.2 Layout contents

	Connectors/Jumpers/Slots/LED	Page		Connectors/Jumpers/Slots/LED	Page
1.	ATX power connectors (24-pin EATXPWR, 4-pin EATX12V)	1-22	8.	System panel connector (20-8 pin PANEL)	1-26
2.	CPU, chassis, and power fan connectors (4-pin CPU_FAN, 3-pin CHA_FAN, 3-pin PWR_FAN)	1-23	9.	USB connectors (10-1 pin USB910, USB1112)	1-27
3.	LGA1156 CPU Socket	1-3	10.	Clear RTC RAM (3-pin CLRTC)	1-18
4.	DDR3 DIMM slots	1-8	11.	Digital audio connector (4-1 pin SPDIF_OUT)	1-23
5.	Turbo Key II switch	1-20	12.	Front panel audio connector (10-1 pin AAFP)	1-24
6.	MemOK! switch	1-19	13.	Onboard LED	1-1
7.	Intel® H55 Serial ATA connectors (7-pin SATA 1-6)	1-25	14.	Serial port connector (10-1 pin COM1)	1-24

1.3 Central Processing Unit (CPU)

The motherboard comes with a surface mount LGA1156 socket designed for the Intel®

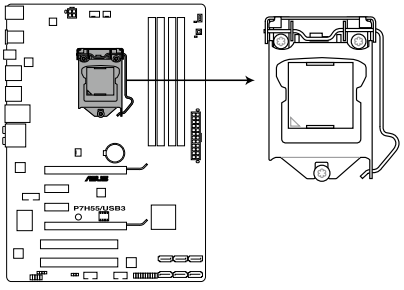
Ensure that all power cables are unplugged before installing the CPU.

- Upon purchase of the motherboard, ensure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components. ASUS will shoulder the cost of repair only if the damage is shipment/transit-related.
- Keep the cap after installing the motherboard. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the LGA1156 socket.
- The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap.

1.3.1 Installing the CPU

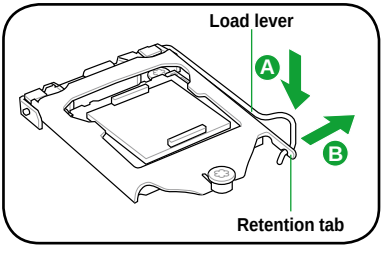
To install a CPU:

1. Locate the CPU socket on the motherboard.



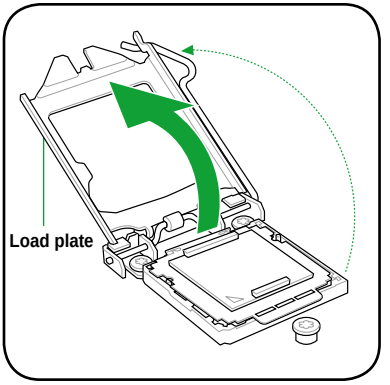
P7H55/USB3 CPU LGA1156

2. Press the load lever with your thumb (A), and then move it to the right (B) until it is released from the retention tab.

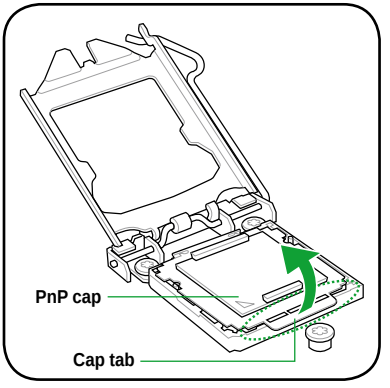


To prevent damage to the socket pins, do not remove the PnP cap unless you are installing a CPU.

3. Lift the load lever in the direction of the arrow until the load plate is completely lifted.

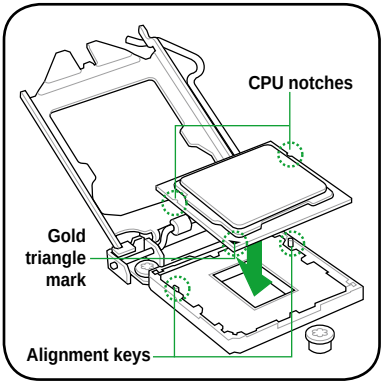


4. Remove the PnP cap from the CPU socket by lifting the tab only.



5. Position the CPU over the socket, ensuring that the gold triangle is on the bottom-left corner of the socket, and then fit the socket alignment keys into the CPU notches.

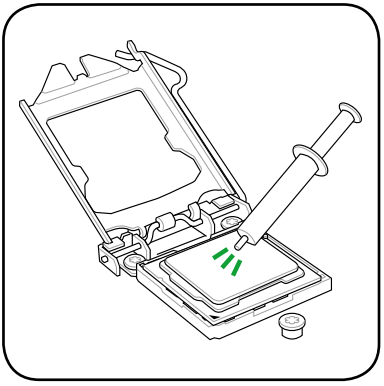
The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the connectors on the socket and damaging the CPU!



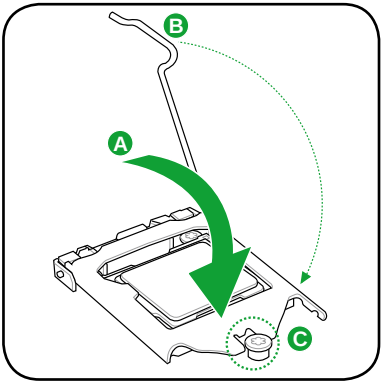
6. Apply some Thermal Interface Material to the exposed area of the CPU that the heatsink will be in contact with, ensuring that it is spread in an even thin layer.

Some heatsinks come with pre-applied thermal paste. If so, skip this step.

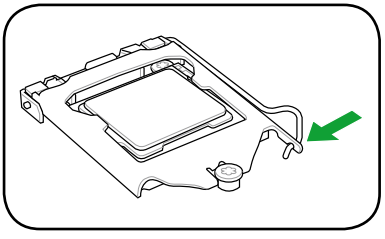
The Thermal Interface Material is toxic and inedible. DO NOT eat it. If it gets into your eyes or touches your skin, wash it off immediately, and seek professional medical help.



7. Close the load plate (A), and then push down the load lever (B), ensuring that the front edge of the load plate slides under the retention knob (C).



8. Insert the load lever under the retention tab.



1.3.2 Installing the CPU heatsink and fan

The Intel® LGA1156 processor requires a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance.

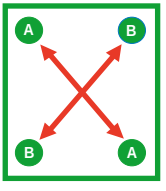
- When you buy a boxed Intel® processor, the package includes the CPU fan and heatsink assembly. If you buy a CPU separately, ensure that you use only Intel®-certified multi-directional heatsink and fan.
- Your Intel® LGA1156 heatsink and fan assembly comes in a push-pin design and requires no tool to install.
- Use an LGA1156-compatible CPU heatsink and fan assembly only. The LGA1156 socket is incompatible with the LGA775 and LGA1366 sockets in size and dimension.

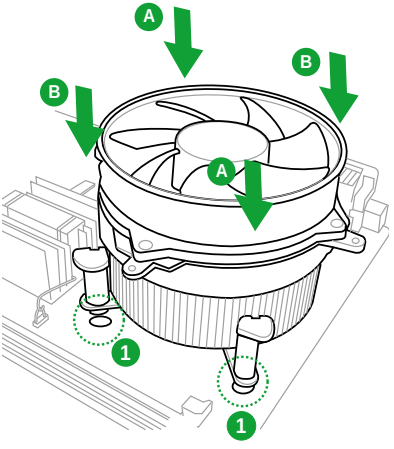
If you purchased a separate CPU heatsink and fan assembly, ensure that the Thermal Interface Material is properly applied to the CPU heatsink or CPU before you install the heatsink and fan assembly.

Ensure that you have installed the motherboard to the chassis before you install the CPU fan and heatsink assembly.

To install the CPU heatsink and fan:

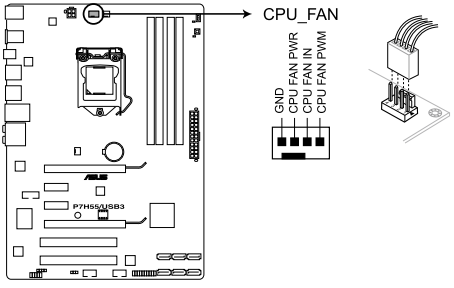
1. Place the heatsink on top of the installed CPU, making sure that the four fasteners match the holes on the motherboard.
2. Push down two fasteners at a time in a diagonal sequence to secure the heatsink and fan assembly in place.





Orient the heatsink and fan assembly such that the CPU fan cable is closest to the CPU fan connector.

3. Connect the CPU fan cable to the connector on the motherboard labeled CPU_FAN.



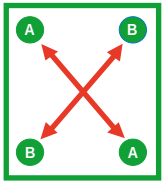
P7H55/USB3 CPU Fan connector

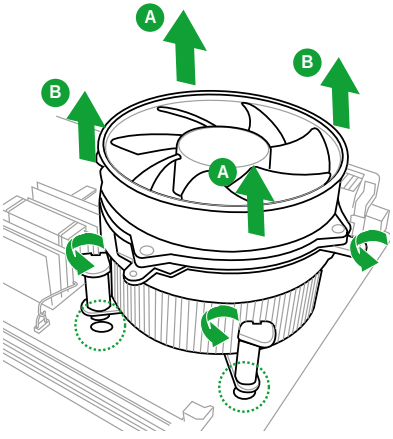
DO NOT forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

1.3.3 Uninstalling the CPU heatsink and fan

To uninstall the CPU heatsink and fan:

1. Disconnect the CPU fan cable from the connector on the motherboard.
2. Rotate each fastener counterclockwise.
3. Pull up two fasteners at a time in a diagonal sequence to disengage the heatsink and fan assembly from the motherboard.





4. Carefully remove the heatsink and fan assembly from the motherboard.

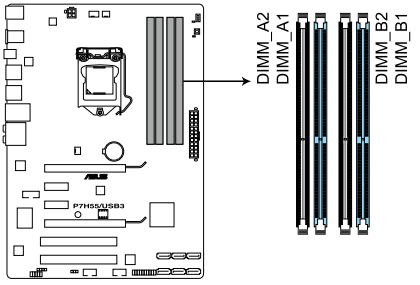
1.4 System memory

1.4.1 Overview

The motherboard comes with four Double Data Rate 3 (DDR3) Dual Inline Memory Modules (DIMM) sockets.

A DDR3 module has the same physical dimensions as a DDR2 DIMM but is notched differently to prevent installation on a DDR2 DIMM socket. DDR3 modules are developed for better performance with less power consumption.

The figure illustrates the location of the DDR3 DIMM sockets:



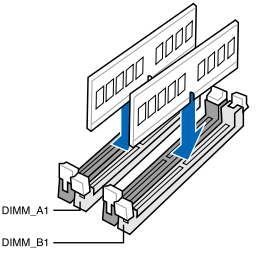
P7H55/USB3 240-pin DDR3 DIMM sockets

Recommended memory configurations

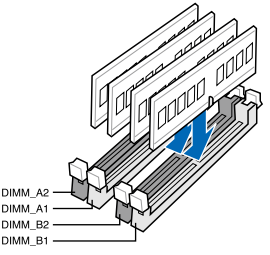
One DIMM:

Install one memory module in slot A1 or B1 first as a single-channel operation.

Two DIMMs (dual-channel operation):



Four DIMMs (dual-channel operation):



1.4.2 Memory configurations

You may install 1GB, 2GB and 4GB unbuffered and non-ECC DDR3 DIMMs into the DIMM sockets.

- You may install varying memory sizes in Channel A and Channel B. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.
- According to Intel spec definition, DDR3-1600 is supported for one DIMM per channel only. ASUS exclusively provides two DDR3-1600 DIMM support for each memory channel.
- According to Intel CPU spec, DIMM voltage below 1.65V is recommended to protect the CPU.
- According to Intel CPU spec, CPUs with a core frequency of 2.66G support the maximum DIMM frequency of up to DDR3-1333. To use DIMMs of a higher frequency with a 2.66G CPU, enable the DRAM O.C. Profile feature in BIOS. Refer to section 2.4 Ai Overclock Tuner for details.
- Always install DIMMs with the same CAS latency. For optimum compatibility, we recommend that you obtain memory modules from the same vendor.
- Due to the memory address limitation on 32-bit Windows OS, when you install 4GB or more memory on the motherboard, the actual usable memory for the OS can be about 3GB or less. For effective use of memory, we recommend that you do any of the following:
  - Use a maximum of 3GB system memory if you are using a 32-bit Windows OS.
  - Install a 64-bit Windows OS when you want to install 4GB or more on the motherboard. For more details, refer to the Microsoft® support site at http://support.microsoft.com/kb/929605/en-us.
- This motherboard does not support DIMMs made up of 512Mb (64MB) chips or less (Memory chip capacity counts in Megabit, 8 Megabit/Mb = 1 Megabyte/MB).

- The default memory operation frequency is dependent on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value. To operate at the vendor-marked or at a higher frequency, refer to section **Ai Tweaker menu** for manual memory frequency adjustment.
- For system stability, use a more efficient memory cooling system to support a full memory load (4 DIMMs) or overclocking condition.

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-2200MHz capability for Intel Lynnfield CPU

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
G.SKILL	F3-17600CL9D-4GBTDS (XMP)	4GB (2 x 2GB)	DS	-	-	9-9-9-24	1.65	•		

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-2133MHz capability for Intel Lynnfield CPU

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
GEIL	GE34GB2133C9DC (XMP)	4GB (2 x 2GB)	DS	-	-	9-9-9-28	1.65		•	•

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-2000MHz capability for Intel Lynnfield CPU

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
KINGSTON	KHX2000C8D3T1K3/3GX (XMP)	3GB (3 x 1GB)	SS	-	-	8	1.65		•	•
KINGSTON	KHX2000C9D3T1K3/3GX (XMP)	3GB (3 x 1GB)	SS	-	-	9	1.65		•	•

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1866MHz capability for Intel Lynnfield CPU

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
Super Talent	W1866UX2GB(XMP)	2GB(2 x 1GB)	SS	-	-	8-8-8-24	-		•	•
Patriot	PVS32G1866LLK(XMP)	2GB(2 x 1GB)	SS	-	-	8-8-8-24	1.9		•	•

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1800MHz capability for Intel Lynnfield CPU

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
KINGSTON	KHX1800C9D3T1K3/6GX(XMP)	6GB(3 x 2GB)	DS	-	-	-	1.65		•	•

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1600MHz capability for Intel Lynnfield CPU

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
A-DATA	AD31600G001GMU	1GB	SS	-	-	9-9-9-24	1.65~1.85	•	•	•
A-DATA	AX3U1600GB1G9-AG	2GB(2 x 1GB)	SS	-	-	9-9-9-24	1.65~1.85	•	•	•
A-DATA	AX3U1600GB1G9-3G	3GB(3 x 1GB)	SS	-	-	9-9-9-24	1.65~1.85	•	•	•
A-DATA	AD31600F002GMU(XMP)	6GB(3 x 2GB)	DS	-	-	7-7-7-20	1.75-1.85	•	•	•
A-DATA	AX3U1600XB2G7-FF(XMP)	6GB(3 x 2GB)	DS	-	-	7-7-7-20	1.75-1.85	•	•	•
CORSAIR	TR3X3G1600C8D	3GB(3 x 1GB)	SS	-	-	8-8-8-24	1.65	•	•	
CORSAIR	CMD4GX3M2A1600C8(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8-24	1.65	•	•	•
Crucial	BL12864BA1608.8SFB(XMP)	1GB	SS	-	-	-	1.8	•	•	•
Crucial	BL25664BN1608.16FF(XMP)	2GB	DS	-	-	8-8-8-24	1.65	•	•	•
G.SKILL	F3-12800CL9D-2GBNQ	2GB(2 x 1GB)	SS	-	-	-	1.6	•	•	•
G.SKILL	F3-12800CL9D-4GBRL	2GB(2 x 1GB)	SS	-	-	-	1.6	•	•	•
G.SKILL	F3-12800CL7D-4GBRH(XMP)	4GB(2 x 2GB)	DS	-	-	7-7-7-24	1.65	•	•	•

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1600MHz capability for Intel Lynnfield CPU (continued)

Vendor	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
GEIL	GV34GB1600C8DC	4GB(2 x 2GB)	DS	-	-	8-8-8-28	1.6	•	•	•
KINGSTON	KHX1600C8D3T1K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	8	1.65	•	•	•
OCZ	OCZ3G1600LV3GK	3GB(3 x 1GB)	SS	-	-	8-8-8	1.65	•	•	•
OCZ	OCZ3X16004GK(XMP)	4GB(2 x 2GB)	DS	-	-	7-7-7	1.9	•	•	•
Super Talent	WB160UX6G8(XMP)	6GB(3 x 2GB)	DS	-	-	-	-	•	•	•
Cell Shock	CS322271	2GB(2 x 1GB)	DS	-	-	7-7-7-14	1.7-1.9	•	•	•
EK Memory	EKM324L28BP8-I16(XMP)	4GB(2 x 2GB)	DS	-	-	9	-	•	•	•
Elixir	M2Y2G64CB8HA9N-DG(XMP)	2GB	DS	-	-	-	-	•	•	
Mushkin	996657	4GB(2 x 2GB)	DS	-	-	7-7-7-20	-	•	•	•
Mushkin	998659(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.5-1.6	•	•	•
Patriot	PVT33G1600ELK	3GB(3 x 1GB)	SS	-	-	9-9-9-24	1.65	•	•	
PATRIOT	PGS34G1600LLKA	4GB(2 x 2GB)	DS	-	-	7-7-7-20	1.7	•	•	•
Team	BoxP/N:TXD34096M1600HC6DC-L (TXD32048M1600HC6-L)(XMP)	4GB(2 x 2GB)	DS	-	-	6-7-6-18	1.65	•	•	•

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1600MHz capability for Intel Clarkdale CPU

Vendor	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
A-DATA	AD31600G001GMU	1GB	SS	-	-	9-9-9-24	1.65~1.85	•	•	
A-DATA	AX3U1600GB1G9-AG	2GB(2 x 1GB)	SS	-	-	9-9-9-24	1.65~1.85	•	•	
A-DATA	AX3U1600PB1G8-2P	2GB(2 x 1GB)	SS	-	-	8-8-8-24	1.65-1.85	•	•	•
A-DATA	AD31600E001GMU	3GB(3 x 1GB)	SS	-	-	8-8-8-24	1.65-1.85	•	•	•
A-DATA	AX3U1600GB1G9-3G	3GB(3 x 1GB)	SS	-	-	9-9-9-24	1.65~1.85	•	•	
A-DATA	AX3U1600PB1G8-3P	3GB(3 x 1GB)	SS	-	-	8-8-8-24	1.65-1.85	•	•	•
A-DATA	AX3U1600GB2G9-AG(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65~1.85	•	•	•
A-DATA	AX3U1600XB2G7-EF(XMP)	4GB(2 x 2GB)	DS	-	-	7-7-7-20	1.75-1.85	•	•	
A-DATA	AD31600F002GMU(XMP)	6GB(3 x 2GB)	DS	-	-	7-7-7-20	1.75-1.85	•	•	
A-DATA	AX3U1600GB2G9-3G(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.65~1.85	•	•	•
A-DATA	AX3U1600GB2G9-3G(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.65~1.85	•	•	•
A-DATA	AX3U1600GB2G9-3G	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.65~1.85	•	•	
A-DATA	AX3U1600XB2G7-FF(XMP)	6GB(3 x 2GB)	DS	-	-	7-7-7-20	1.75-1.85	•	•	
CORSAIR	TR3X3G1600C8D	3GB(3 x 1GB)	SS	-	-	8-8-8-24	1.65	•	•	
CORSAIR	TR3X3G1600C8DVer2.1(XMP)	3GB(3 x 1GB)	SS	-	-	8-8-8-24	1.65	•	•	
CORSAIR	TR3X3G1600C9Ver1.1(XMP)	3GB(3 x 1GB)	SS	-	-	9-9-9-24	1.65	•	•	
CORSAIR	CMG4GX3M2A1600C7(XMP)	4GB(2 x 2GB)	DS	-	-	7-7-7-20	1.65	•	•	•
CORSAIR	CMX4GX3M2A1600C9(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65	•	•	•
CORSAIR	TR3X6G1600C8DVer2.1(XMP)	6GB(3 x 2GB)	DS	-	-	8-8-8-24	1.65	•	•	
CORSAIR	TR3X6G1600C9Ver2.1(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.65	•	•	
CORSAIR	CMD8GX3M4A1600C8(XMP)	8GB(4 x 2GB)	DS	-	-	8-8-8-24	1.65	•	•	•
CORSAIR	CMX8GX3M4A1600C9(XMP)	8GB(4 x 2GB)	DS	-	-	9-9-9-24	1.65	•	•	•
Crucial	BL12864BA1608.8SFB(XMP)	1GB	SS	-	-	-	1.8	•	•	•
Crucial	BL25664BN1608.16FF(XMP)	2GB	DS	-	-	8-8-8-24	1.65	•	•	
G.SKILL	F3-12800CL9D-2GBNQ	2GB(2 x 1GB)	SS	-	-	-	1.6	•	•	•
G.SKILL	F3-12800CL9D-4GBRL	2GB(2 x 1GB)	SS	-	-	-	1.6	•	•	•
G.SKILL	F3-12800CL7D-4GBRH(XMP)	4GB(2 x 2GB)	DS	-	-	7-7-7-24	1.65	•	•	•
G.SKILL	F3-12800CL8T-6GBPI(XMP)	6GB(3 x 2GB)	DS	-	-	8-8-8-21	1.6~1.65	•	•	•
G.SKILL	F3-12800CL9T-6GBNQ	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.5-1.6	•	•	•
KINGSTON	KHX1600C9D3K3/12GX(XMP)	12GB(3 x 4GB)	DS	-	-	-	1.65	•	•	•
KINGSTON	KHX1600C8D3K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	8	1.65	•	•	
KINGSTON	KHX1600C8D3K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	8	1.65	•	•	•
KINGSTON	KHX1600C8D3T1K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	8	1.65	•	•	•
KINGSTON	KHX1600C9D3K3/6GX(XMP)	6GB(3 x 2GB)	DS	-	-	9	1.65	•	•	•
OCZ	OCZ3G1600LV3GK	3GB(3 x 1GB)	SS	-	-	8-8-8	1.65	•	•	
OCZ	OCZ3P1600LV3GK	3GB(3 x 1GB)	SS	-	-	7-7-7	1.65	•	•	

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1600MHz capability for Intel Clarkdale CPU (continued)

Vendor	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
OCZ	OCZ3OB1600LV4GK	4GB(2 x 2GB)	DS	-	-	9-9-9	1.65	•	•	
OCZ	OCZ3P1600LV4GK	4GB(2 x 2GB)	DS	-	-	7-7-7	1.65	•	•	
OCZ	OCZ3X16004GK(XMP)	4GB(2 x 2GB)	DS	-	-	7-7-7	1.9	•	•	•
OCZ	OCZ3X1600LV4GK(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8	1.65	•		•
OCZ	OCZ3FXE1600C7LV6GK	6GB(3 x 2GB)	DS	-	-	7-7-7	1.65	•	•	
OCZ	OCZ3G1600LV6GK	6GB(3 x 2GB)	DS	-	-	8-8-8	1.65	•	•	
OCZ	OCZ3X1600LV6GK(XMP)	6GB(3 x 2GB)	DS	-	-	8-8-8	1.65	•	•	
OCZ	OCZ3X1600LV6GK(XMP)	6GB(3 x 2GB)	DS	-	-	8-8-8	1.65	•	•	
Super Talent	WB160UX6G8(XMP)	6GB(3 x 2GB)	DS	-	-	-	-	•	•	•

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1333MHz capability for Intel Lynnfield CPU

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
A-DATA	AD3133301GOU	1GB	SS	A-DATA	AD30908C8D-15IG	-	-	•	•	•
A-DATA	AD31333002GOU	2GB	DS	A-DATA	AD30908C8D-15IG	-	-	•	•	•
A-DATA	AD3U1333B2G9-2	2GB	DS	A-DATA	AD30908C8D-15IG	-	-	•	•	•
CORSAIR	TR3X3G1333C9 (Ver2.1)	3GB(3 x 1GB)	SS	-	-	9-9-9-24	1.5	•	•	•
CORSAIR	BoxP/N:TWIN3X2048-1333C9 (CM3X1024-1333C9)Ver1.1	2GB(2 x 1GB)	DS	-	-	9-9-9-24	1.70	•	•	
Crucial	CT12864BA1339.8FF	1GB	SS	MICRON	D9KPT	9	-	•	•	•
Crucial	BL25664BN1337.16FF(XMP)	2GB	DS	-	-	7-7-7-24	1.65	•	•	•
ELPIDA	EBJ10UE8BAW0-DJ-E	1GB	SS	ELPIDA	J1108BABG-DJ-E	9	-	•	•	•
ELPIDA	EBJ21UE8BAW0-DJ-E	2GB	DS	ELPIDA	J1108BABG-DJ-E	9	-	•	•	
G.SKILL	F3-10600CL8D-2GBHK	2GB(2 x 1GB)	SS	-	-	-	1.65	•	•	•
G.SKILL	F3-10666CL8D-4GBHK(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8-21	1.5-1.6	•	•	•
GEIL	GG34GB1333C9DC	4GB(2 x 2GB)	DS	GEIL	GL1L128M88BA12N	9-9-9-24	1.3	•	•	•
Hynix	HMT112U6BFR8C-H9	1GB	SS	Hynix	H5TQ1G83BFR	9	-	•	•	•
Hynix	HMT125U6BFR8C-H9	2GB	DS	Hynix	H5TQ1G83BFRH9C	9	-	•	•	
KINGSTON	KVR1333D3N9/2G	2GB	DS	Qimonda	IDSH1G-03A1F1C-13H	9	1.5	•	•	•
KINGSTON	KVR1333D3N9/4G	4GB	DS	SAMSUNG	K4B2G0846B-HCH9	9	1.5	•	•	•
MICRON	MT8JTF12864AZ-1G4F1	1GB	SS	MICRON	9FF22 D9KPT	9	-	•	•	•
MICRON	MT16JTF25664AZ-1G4F1	2GB	DS	MICRON	9FF22 D9KPT	9	-	•	•	•
OCZ	OCZ3P1333LV3GK	3GB(3 x 1GB)	SS	-	-	7-7-7	1.65	•	•	•
OCZ	OCZX1333LV6GK(XMP)	6GB(3 x 2GB)	DS	NA	-	8-8-8	1.6	•	•	•
PSC	AL7F8G73D-DG1	1GB	SS	PSC	A3P1GF3DGF	-	-	•	•	
PSC	AL8F8G73D-DG1	2GB	DS	PSC	A3P1GF3DGF	-	-	•	•	•
SAMSUNG	M378B2873EH1-CH9	1GB	SS	SAMSUNG	K4B1G0846E	-	-		•	•
SAMSUNG	M378B5673EH1-CH9	2GB	DS	SAMSUNG	K4B1G0846E	-	-	•	•	•
Asint	SLZ3128M8-EDJE	2GB	DS	ELPIDA	J1108BASE-DJ-E	-	-	•	•	
ASUS	N/A	1GB	DS	-	-	-	-	•	•	
ATP	AQ28M72D8BJH9S	1GB	SS	SAMSUNG	K4B1G0846D(ECC)	-	-	•	•	•
ATP	AQ56M72E8BJH9S	2GB	DS	SAMSUNG	K4B1G0846D(ECC)	-	-	•	•	•
BUFFALO	FSH1333D3G-T3G(XMP)	3GB(3 x 1GB)	SS	-	-	7-7-7-20	-	•	•	•
BUFFALO	FSX1333D3G-2G	2GB	DS	-	-	-	-	•	•	•
EK Memory	EKM324L28BP8-I13	4GB(2 x 2GB)	DS	-	-	9	-	•	•	
Elixir	M2Y2G64CB8HA9N-CG	2GB	DS	-	-	-	-	•	•	•
Patriot	PVT33G1333ELK	3GB(3 x 1GB)	SS	-	-	9-9-9-24	1.65	•	•	•
Patriot	PVT36G1333ELK	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.65	•	•	•
Silicon Power	SP001GBLTU1333S01	1GB	SS	NANYA	NT5CB128M8AN-CG	-	-	•	•	
Silicon Power	SP002GBLTU133S02	2GB	DS	S-POWER	I0YT3E0	9	-	•	•	•

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1333MHz capability for Intel Clarkdale CPU

Vendor	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
A-DATA	AD3133301GOU	1GB	SS	A-DATA	AD30908C8D-15IG	-	-	•	•	
A-DATA	AX3U1333PB2G7-2P	4GB(2 x 2GB)	DS	-	-	7-7-7-20	1.65-1.85	•	•	
A-DATA	AD3U1333C4G9-B	4GB	DS	Hynix	H5TQ2G83AFRH9C	1333-9-9-9-24	-	•	•	•
A-DATA	AD31333E002G0U	6GB(3 x 2GB)	DS	-	-	7-7-7-20	1.65-1.85	•	•	
A-DATA	AX3U1333PB2G7-3P	6GB(3 x 2GB)	DS	-	-	7-7-7-20	1.65-1.85	•	•	
CORSAIR	TR3X3G1333C9 (Ver2.1)	3GB(3 x 1GB)	SS	-	-	9-9-9-24	1.5	•	•	
CORSAIR	CM3X2G1333C9	2GB	DS	-	-	9-9-9-24	1.5	•	•	
CORSAIR	BoxP/N:TW3X4G1333C9DHX (CM3X2048-1333C9DHX)Ver3.2	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.70	•	•	
CORSAIR	TR3X6G1333C9 (Ver2.1)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.5	•	•	•
CORSAIR	CMX8GX3M4A1333C9	8GB(4 x 2GB)	DS	-	-	9-9-9-24	1.5	•	•	
Crucial	CT12864BA1339.8FF	1GB	SS	MICRON	D9KPT	9	-	•	•	•
Crucial	CT12864BA1339.8SFD	1GB	SS	MICRON	MT8JF12864AY-1G4D1	-	-	•	•	•
Crucial	CT12872BA1339.9FF	1GB	SS	MICRON	D9KPT(ECC)	9	-	•	•	
Crucial	BL25664BN1337.16FF(XMP)	2GB	DS	-	-	7-7-7-24	1.65	•	•	•
Crucial	CT25664BA1339.16FF	2GB	DS	MICRON	D9KPT	9	-	•	•	
Crucial	CT25664BA1339.16SFD	2GB	DS	MICRON	D9JNM	-	-	•	•	
Crucial	CT25672BA1339.18FF	2GB	DS	MICRON	D9KPT(ECC)	9	-	•	•	•
Crucial	BL25664BA1336.16SFB1	4GB(2 x 2GB)	DS	NA	-	6-6-6-20	1.8	•	•	•
ELPIDA	EBJ10UE8BAW0-DJ-E	1GB	SS	ELPIDA	J1108BABG-DJ-E	9	-	•	•	•
ELPIDA	EBJ10UE8BDF0-DJ-F	1GB	SS	ELPIDA	J1108BDSE-DJ-F	-	-	•	•	•
ELPIDA	EBJ10UE8EDF0-DJ-F	1GB	SS	ELPIDA	J1108EDSE-DJ-F	-	-	•	•	•
ELPIDA	EBJ21UE8BAW0-DJ-E	2GB	DS	ELPIDA	J1108BABG-DJ-E	9	-	•	•	•
ELPIDA	EBJ21UE8BDF0-DJ-F	2GB	DS	ELPIDA	J1108BDSE-DJ-F	-	-	•	•	•
ELPIDA	EBJ21UE8EDF0-DJ-F	2GB	DS	ELPIDA	J1108EDSE-DJ-F	-	-	•	•	•
G.SKILL	F3-10600CL7D-2GBPI	2GB(2 x 1GB)	SS	-	-	-	1.65	•	•	
G.SKILL	F3-10600CL8D-2GBHK	2GB(2 x 1GB)	SS	-	-	-	1.65	•	•	•
G.SKILL	F3-10666CL7T-6GBPK(XMP)	2GB	DS	-	-	7-7-7-18	1.5-1.6	•	•	•
G.SKILL	F3-10666CL7D-4GBPI(XMP)	4GB(2 x 2GB)	DS	-	-	7-7-7-21	1.5	•	•	•
G.SKILL	F3-10666CL7D-4GBRH(XMP)	4GB(2 x 2GB)	DS	-	-	7-7-7-21	1.5	•	•	•
G.SKILL	F3-10666CL8D-4GBHK(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8-21	1.5-1.6	•	•	•
G.SKILL	F3-10666CL8D-4GBRM(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8-21	1.5-1.6	•	•	•
G.SKILL	F3-10666CL9T-6GBNQ	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.5	•	•	•
GEIL	GG34GB1333C9DC	4GB(2 x 2GB)	DS	GEIL	GL1L128M88BA12N	9-9-9-24	1.3	•	•	•
Hynix	HMT112U6BFR8C-H9	1GB	SS	Hynix	H5TQ1G83BFR	9	-	•	•	•
Hynix	HMT125U6BFR8C-H9	2GB	DS	Hynix	H5TQ1G83BFR	9	-	•	•	
Hynix	HMT125U6BFR8C-H9	2GB	DS	Hynix	H5TQ1G83BFRH9C	9	-	•	•	•
KINGSTON	KVR1333D3N9/2G	2GB	DS	Qimonda	IDSH1G-03A1F1C-13H	9	1.5	•	•	•
KINGSTON	KVR1333D3N9/4G	4GB	DS	SAMSUNG	K4B2G0846B-HCH9	9	1.5	•	•	•
MICRON	MT8JTF12864AZ-1G4F1	1GB	SS	MICRON	9FF22 D9KPT	9	-	•	•	•
MICRON	MT16JTF25664AZ-1G4F1	2GB	DS	MICRON	9FF22 D9KPT	9	-	•	•	
OCZ	OCZ3RPX1333EB2GK	2GB(2 x 1GB)	SS	NANYA	-	6-5-5	1.85	•	•	
OCZ	OCZ3G1333LV3GK	3GB(3 x 1GB)	SS	-	-	9-9-9	1.65	•	•	
OCZ	OCZ3P1333LV3GK	3GB(3 x 1GB)	SS	-	-	7-7-7	1.65	•	•	•
OCZ	OCZ3G1333ULV4GK	4GB(2 x 2GB)	DS	-	-	8-8-8	1.65	•	•	
OCZ	OCZ3RPX1333EB4GK	4GB(2 x 2GB)	DS	-	-	-	1.85	•	•	
OCZ	OCZ3G1333LV6GK	6GB(3 x 2GB)	DS	-	-	9-9-9	1.65	•	•	•
OCZ	OCZ3P1333LV6GK	6GB(3 x 2GB)	DS	-	-	7-7-7	1.65	•	•	
OCZ	OCZX1333LV6GK(XMP)	6GB(3 x 2GB)	DS	NA	-	8-8-8	1.6	•	•	•
PSC	AL7F8G73D-DG1	1GB	SS	PSC	A3P1GF3DGF	-	-	•	•	•
PSC	AL8F8G73D-DG1	2GB	DS	PSC	A3P1GF3DGF	-	-	•	•	•
SAMSUNG	M378B2873DZ1-CH9	1GB	SS	SAMSUNG	K4B1G0846D	9	-	•	•	•
SAMSUNG	M378B2873EH1-CH9	1GB	SS	SAMSUNG	K4B1G0846E	-	-	•	•	•
SAMSUNG	M391B2873DZ1-CH9	1GB	SS	SAMSUNG	K4B1G0846D(ECC)	9	-	•	•	•

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1333MHz capability for Intel Clarkdale CPU (continued)

Vendor	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
SAMSUNG	M378B5673DZ1-CH9	2GB	DS	SAMSUNG	K4B1G0846D	9	-	•	•	•
SAMSUNG	M378B5673EH1-CH9	2GB	DS	SAMSUNG	K4B1G0846E	-	-	•	•	•
SAMSUNG	M391B5673DZ1-CH9	2GB	DS	SAMSUNG	K4B1G0846D(ECC)	9	-	•	•	•
SAMSUNG	M378B5273BH1-CH9	4GB	DS	SAMSUNG	K4B2G0846B-HCH9	9	-	•	•	•
Super Talent	W1333UX2GB(XMP)	2GB(2 x 1GB)	SS	-	-	8	1.8	•	•	•
Transcend	TS128MLK64V3U	1GB	SS	SAMSUNG	K4B1G0846D	9	-	•	•	
Transcend	TS256MLK64V3U	2GB	DS	SAMSUNG	K4B1G0846D	9	-	•	•	
Asint	SLY3128M8-EDJ	1GB	SS	Asint	DDRIII1208-DJ	-	-	•	•	
Asint	SLY3128M8-EDJE	1GB	SS	ELPIDA	J1108BASE-DJ-E	-	-	•	•	•
ATP	AQ28M64A8BJH9S	1GB	SS	SAMSUNG	K4B1G0846E	-	-	•	•	•
ATP	AQ28M72D8BJH9S	1GB	SS	SAMSUNG	K4B1G0846D(ECC)	-	-	•	•	•
ATP	AQ56M64B8BJH9S	2GB	DS	SAMSUNG	K4B1G0846D	-	-	•		•
ATP	AQ56M72E8BJH9S	2GB	DS	SAMSUNG	K4B1G0846D(ECC)	-	-	•	•	•
BUFFALO	FSX1333D3G-1G	1GB	SS	-	-	-	-	•	•	•
BUFFALO	FSH1333D3G-T3G(XMP)	3GB(3 x 1GB)	SS	-	-	7-7-7-20	-	•	•	•
EK Memory	EKM324L28BP8-I13	4GB(2 x 2GB)	DS	-	-	9	-	•	•	
Elixir	M2Y2G64CB8HA9N-CG	2GB	DS	-	-	-	-	•	•	
Patriot	PDC32G1333LLK	1GB	SS	PATRIOT	-	7	1.7	•	•	•
Patriot	PVS34G1333ELK	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.5	•	•	
Patriot	PVT36G1333ELK	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.65	•	•	•
Silicon Power	SP001GBLTU1333S01	1GB	SS	NANYA	NT5CB128M8AN-CG	-	-	•	•	•
Silicon Power	SP001GBLTU133S02	1GB	SS	S-POWER	I0YT3E0	9	-	•	•	

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1067MHz capability for Intel Lynnfield CPU

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
Crucial	CT12864BA1067.8FF	1GB	SS	MICRON	D9KPT	7	-	•	•	•
Crucial	CT25664BA1067.16FF	2GB	DS	MICRON	D9KPT	7	-	•	•	•
ELPIDA	EBJ10UE8EDF0-AE-F	1GB	SS	ELPIDA	J1108EDSE-DJ-F	-	-	•	•	•
ELPIDA	EBJ21UE8EDF0-AE-F	2GB	DS	ELPIDA	J1108EDSE-DJ-F	-	-	•	•	
Hynix	HMT112U6AFP8C-G7N0	1GB	SS	HYNIX	H5TQ1G83AFPG7C	7	-	•	•	•
Hynix	HMT125U6AFP8C-G7N0	2GB	DS	HYNIX	H5TQ1G83AFPG7C	7	-	•	•	•
KINGSTON	KVR1066D3N7/1G	1GB	SS	KINGSTON	D1288JEKAPA7U	7	1.5		•	•
KINGSTON	KVR1066D3N7/2G	2GB	DS	KINGSTON	D1288JEKAPGA7U	7	1.5	•	•	•
MICRON	MT8JTF12864AZ-1G1F1	1GB	SS	MICRON	8ZF22 D9KPV	7	-	•	•	•
MICRON	MT16JTF25664AZ-1G1F1	2GB	DS	MICRON	8ZF22 D9KPV	7	-	•	•	•
SAMSUNG	M378B5273BH1-CF8	4GB	DS	SAMSUNG	K4B2G0846B-HCF8	8	1.5		•	•
Transcend	TS256MLK64V1U	2GB	DS	ELPIDA	J1108BABG-AE-E	7	-	•	•	•
Asint	SLY3128M8-EAE	1GB	SS	Asint	DDRIII1208-AE	-	-	•	•	•
Asint	SLZ3128M8-EAE	2GB	DS	Asint	DDRIII1208-AE	-	-	•	•	•
Elixir	M2Y2G64CB8HA9N-BE	2GB	DS	-	-	-	-	•	•	
WINTEC	3DU3191A-10	1GB	DS	Qimonda	IDSH51-03A1F1C-10F	7	-	•	•	

P7H55/USB3 Motherboard Qualified Vendors Lists (QVL) DDR3-1067MHz capability for Intel Clarkdale CPU

Vendor	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
Crucial	CT12864BA1067.8FF	1GB	SS	MICRON	D9KPT	7	-	•	•	•
Crucial	CT12864BA1067.8SFD	1GB	SS	MICRON	D9JNL	7	-	•	•	•
Crucial	CT12872BA1067.9FF	1GB	SS	MICRON	D9KPT(ECC)	7	-	•	•	•
Crucial	CT25664BA1067.16FF	2GB	DS	MICRON	D9KPT	7	-	•	•	•
Crucial	CT25664BA1067.16SFD	2GB	DS	MICRON	D9JNL	7	-	•	•	•
Crucial	CT25672BA1067.18FF	2GB	DS	MICRON	D9KPT(ECC)	7	-	•	•	•
ELPIDA	EBJ10UE8BAW0-AE-E	1GB	SS	ELPIDA	J1108BABG-DJ-E	7	-	•	•	•
ELPIDA	EBJ10UE8EDF0-AE-F	1GB	SS	ELPIDA	J1108EDSE-DJ-F	-	-	•	•	•
ELPIDA	EBJ11UD8BAFA-AG-E	1GB	DS	ELPIDA	J5308BASE-AC-E	8	-	•	•	
ELPIDA	EBJ21UE8BAW0-AE-E	2GB	DS	ELPIDA	J1108BABG-DJ-E	7	-	•	•	•
ELPIDA	EBJ21UE8EDF0-AE-F	2GB	DS	ELPIDA	J1108EDSE-DJ-F	-	-	•	•	•
Hynix	HMT112U6AFP8C-G7N0	1GB	SS	HYNIX	H5TQ1G83AFPG7C	7	-	•	•	•
Hynix	HYMT112U64ZNF8-G7	1GB	SS	HYNIX	HY5TQ1G831ZNFP-G7	7	-	•	•	
Hynix	HMT125U6AFP8C-G7N0	2GB	DS	HYNIX	H5TQ1G83AFPG7C	7	-	•	•	•
Hynix	HYMT125U64ZNF8-G7	2GB	DS	HYNIX	HY5TQ1G831ZNFP-G7	7	-	•	•	•
KINGSTON	KVR1066D3N7/1G	1GB	SS	KINGSTON	D1288JEKAPA7U	7	1.5	•	•	
KINGSTON	KVR1066D3N7/2G	2GB	DS	KINGSTON	D1288JEKAPGA7U	7	1.5	•	•	•
KINGSTON	KVR1066D3N7/2G	2GB	DS	ELPIDA	J1108BABG-DJ-E	-	1.5	•	•	•
KINGSTON	KVR1066D3N7/4G	4GB	DS	SAMSUNG	K4B2G0846B-HCF8	-	1.5	•	•	•
MICRON	MT8JTF12864AY-1G1D1	1GB	SS	MICRON	7VD22	7	-	•	•	
MICRON	MT8JTF12864AZ-1G1F1	1GB	SS	MICRON	8ZF22 D9KPV	7	-	•	•	•
MICRON	MT16JTF25664AY-1G1D1	2GB	DS	MICRON	7VD22	7	-	•	•	
MICRON	MT16JTF25664AZ-1G1F1	2GB	DS	MICRON	8ZF22 D9KPV	7	-	•	•	•
SAMSUNG	M378B5273BH1-CF8	4GB	DS	SAMSUNG	K4B2G0846B-HCF8	8	1.5	•	•	
Transcend	TS256MLK64V1U	2GB	DS	ELPIDA	J1108BABG-AE-E	7	-	•	•	•
Asint	SLY3128M8-EAE	1GB	SS	Asint	DDRIII1208-AE	-	-	•	•	
Asint	SLZ3128M8-EAE	2GB	DS	Asint	DDRIII1208-AE	-	-	•	•	•
Elixir	M2Y2G64CB8HA9N-BE	2GB	DS	-	-	-	-	•	•	•
WINTEC	3DU3191A-10	1GB	DS	Qimonda	IDSH51-03A1F1C-10F	7	-	•	•	

Side(s): SS - Single-sided DS - Double-sided
DIMM support:

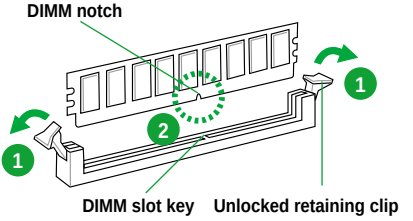
- **A***: Supports one (1) module inserted into slot A1 or B1 as Single-channel memory configuration.
- B*: Supports two (2) modules inserted into the blue slots (A1 and B1) as one pair of Dual-channel memory configuration.
- C*: Supports four (4) modules inserted into both the blue and the black slots as two pairs of Dual-channel memory configuration.

- ASUS exclusively provides hyper DIMM support function.
- Based on the Intel® specification, you can only install one X.M.P. DIMM per channel.
- Hyper DIMM support is subject to the physical characteristics of individual CPUs.
- According to Intel spec definition, DDR3-1600 is supported for one DIMM per channel only. ASUS exclusively provides two DDR3-1600 DIMM support for each memory channel.
- According to Intel CPU spec, CPUs with a core frequency of 2.66G support the maximum DIMM frequency of up to DDR3-1333. To use DIMMs of a higher frequency with a 2.66G CPU, enable the **DRAM O.C. Profile** feature in BIOS. Refer to section 2.4 Ai Overclock Tuner for details.
- Visit the ASUS website for the latest QVL.

1.4.3 Installing a DIMM

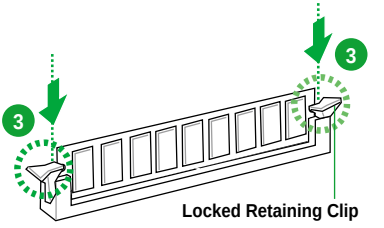
Ensure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

1. Unlock a DIMM socket by pressing the retaining clips outward.
2. Align a DIMM on the socket such that the notch on the DIMM matches the DIMM slot key on the socket.



A DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket in the wrong direction to avoid damaging the DIMM.

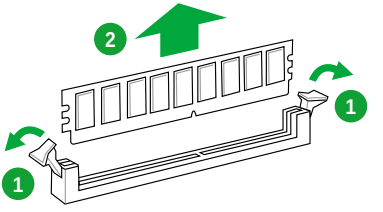
3. Hold the DIMM by both of its ends, then insert the DIMM vertically into the socket. Apply force to both ends of the DIMM simultaneously until the retaining clips snap back into place, and the DIMM cannot be pushed in any further to ensure proper sitting of the DIMM.



Always insert the DIMM into the socket VERTICALLY to prevent DIMM notch damage.

1.4.4 Removing a DIMM

1. Simultaneously press the retaining clips outward to unlock the DIMM.
2. Remove the DIMM from the socket.



Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.

1.5 Expansion slot

In the future, you may need to install expansion cards. The following sub-sections describe the slot and the expansion cards that it supports.

Unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

1.5.1 Installing an expansion card

To install an expansion card:

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the system unit cover (if your motherboard is already installed in a chassis).
3. Remove the bracket opposite the slot that you intend to use. Keep the screw for later use.
4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.
6. Replace the system cover.

1.5.2 Configuring an expansion card

After installing the expansion card, configure it by adjusting the software settings.

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup.
2. Assign an IRQ to the card.
3. Install the software drivers for the expansion card.

1.5.3 PCI slots

The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications.

1.5.4 PCI Express x1 slots

This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications.

1.5.5 PCI Express 2.0 x16 slots

This motherboard has two PCI Express 2.0 x16 slots that support PCI Express x16 2.0 graphic cards complying with the PCI Express specifications.

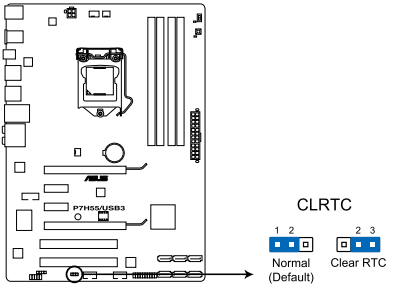
Refer to section **1.2 Motherboard overview** for the location of the expansion slot.

- In single VGA card mode, use the PCIe 2.0 x16_1 slot (blue) for a PCI Express x16 graphics card to get better performance.
- We recommend that you provide sufficient power when running CrossFireX™ mode.
- Connect a chassis fan to the motherboard connector labeled CHA_FAN when using multiple graphics cards for better thermal environment.

1.6 Jumpers

Clear RTC RAM (3-pin CLRTC)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.



P7H55/USB3 Clear RTC RAM

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5-10 seconds, then move the cap back to pins 1-2.
3. Plug the power cord and turn ON the computer.
4. Hold down the **<Del>** key during the boot process and enter BIOS setup to re-enter data.

Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure!

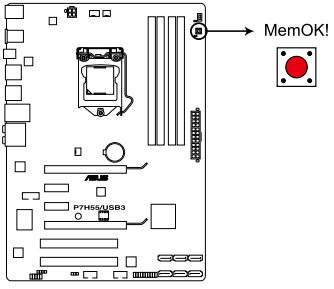
- If the steps above do not help, remove the onboard battery and move the jumper again to clear the CMOS RTC RAM data. After the CMOS clearance, reinstall the battery.
- You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so the BIOS can automatically reset parameter settings to default values.

1.7 Onboard switches

Onboard switch allows you to fine-tune performance when working on a bare or open-case system. This is ideal for overclockers and gamers who continually change settings to enhance system performance.

1. MemOK! switch

Installing DIMMs that are incompatible with the motherboard may cause system boot failure, and the DRAM_LED near the MemOK! switch lights continuously. Press and hold the MemOK! switch until the DRAM_LED starts blinking to begin automatic memory compatibility tuning for successful boot.



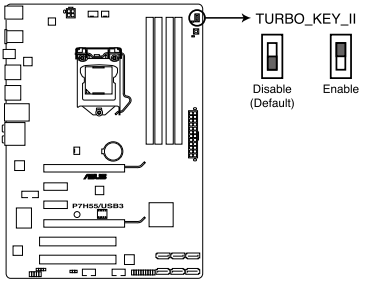
P7H55/USB3 MemOK! switch

- The DRAM_LED also lights when the DIMM is not properly installed. Turn off the system and reinstall the DIMM before using the MemOK! function.
- Press the MemOK! switch under Windows™ OS environment will reboot the computer and start memory tuning.
- During the tuning process, the system loads and tests failsafe memory settings. It takes about 30 seconds for the system to test one set of failsafe settings. If the test fails, the system reboots and test the next set of failsafe settings. The blinking speed of the DRAM_LED increases, indicating different test processes.
- If the installed DIMMs still fail to boot after the whole tuning process, the DRAM_LED lights continuously. Replace the DIMMs with ones recommended in the Memory QVL (Qualified Vendors Lists) in this user manual or on the ASUS website at www.asus.com.
- If you turn off the computer and replace DIMMs during the tuning process, the system continues memory tuning after turning on the computer. To stop memory tuning, turn off the computer and unplog the power cord for about 5–10 seconds.
- If your system fail to boot due to BIOS overclocking, press the MemOK! switch to boot and load BIOS default settings. A messgae will appear during POST reminding you that the BIOS has been restored to its default settings.

2. Turbo Key II switch

This switch allows you to auto-tune your CPU to enhance the system performance.

For ensuring the system performance, turn the switch setting to **Enable** when the system is powered off.

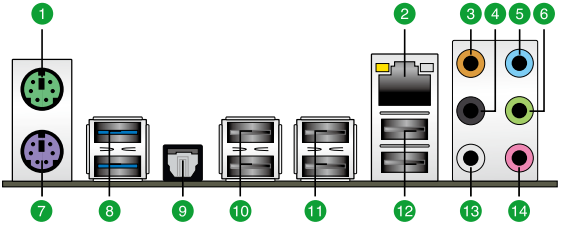


P7H55/USB3 TURBO_KEY_II

- The LED near the Turbo Key II switch lights when the switch setting is turned to **Enable**.
- If you clear the CMOS or load the BIOS setup defaults, the related overclocking items in the BIOS menu follow the current setting of the Turbo Key II switch.
- If you change the switch setting to Enable under the OS environment, the Turbo Key II function will be activated after the next system bootup.
- You may use the TurboV Auto Tuning, overclock in the BIOS setup program, and enable the Turbo Key II function at the same time. However, the system will use the last setting you have made.

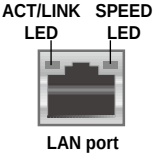
1.8 Connectors

1.8.1 Rear panel connectors



1. **PS/2 mouse port (green).** This port is for a PS/2 mouse.
2. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table on the next page for the LAN port LED indicators.

ACT/LINK LED		SPEED LED	
Status	Description	Status	Description
OFF	No link	OFF	10 Mbps connection
ORANGE	Linked	ORANGE	100 Mbps connection
BLINKING	Data activity	GREEN	1 Gbps connection



3. **Center/Subwoofer port (orange).** This port connects the center/subwoofer speakers.
4. **Rear Speaker Out port (black).** This port connects the rear speakers in a 4-channel, 6-channel, or 8-channel audio configuration.
5. **Line In port (light blue).** This port connects the tape, CD, DVD player, or other audio sources.
6. **Line Out port (lime).** This port connects a headphone or a speaker. In 4-channel, 6-channel, and 8-channel configuration, the function of this port becomes Front Speaker Out.
7. **PS/2 Keyboard port (purple).** This port is for a PS/2 keyboard.
8. **USB 3.0 ports 1 and 2 (blue).** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 3.0 devices.
9. **Optical S/PDIF Out port.** This port connects an external audio output device via an optical S/PDIF cable.
10. **USB 2.0 ports 5 and 6.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
11. **USB 2.0 ports 3 and 4.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
12. **USB 2.0 ports 1 and 2.** These two 4-pin Universal Serial Bus (USB) ports connect to USB 2.0/1.1 devices.
13. **Side Speaker Out port (gray).** This port connects the side speakers in an 8-channel audio configuration.
14. **Microphone port (pink).** This port connects a microphone.

Refer to the audio configuration table on the next page for the function of the audio ports in 2, 4, 6, or 8-channel configuration.

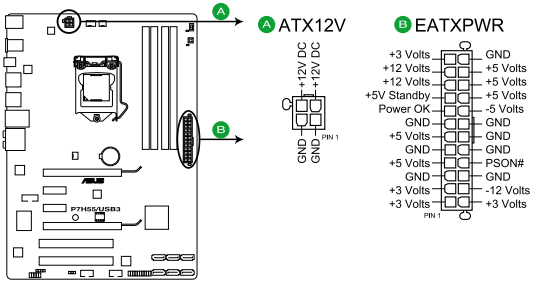
Audio 2, 4, 6, 8-channel configuration

Port	Headset 2-channel	4-channel	6-channel	8-channel
Light Blue	Line In	Line In	Line In	Line In
Lime	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In	Mic In
Orange	–	–	Center/Subwoofer	Center/Subwoofer
Black	–	Rear Speaker Out	Rear Speaker Ou	Rear Speaker Out
Gray	–	–	–	Side Speaker Out

1.8.2 Internal connectors

1. ATX power connectors (24-pin EATXPWR, 4-pin EATX12V)

These connectors are for ATX power supply plugs. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

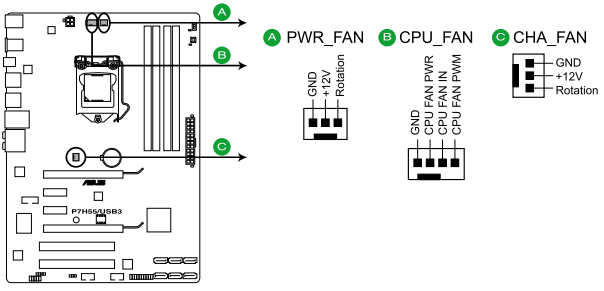


P7H55/USB3 ATX power connectors

- For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12 V Specification 2.0 (or later version) and provides a minimum power of 350 W.
- Do not forget to connect the 4-pin EATX12V power plug. Otherwise, the system will not boot.
- If you are uncertain about the minimum power supply requirement for your system, refer to the Recommended Power Supply Wattage Calculator at **http://support.asus.com/PowerSupplyCalculator/PSCalculator.aspx?SLanguage=en-us** for details.

2. CPU, chassis, and power fan connectors (4-pin CPU_FAN, 3-pin CHA_FAN, 3-pin PWR_FAN)

The fan connectors support cooling fans of 350 mA~1000 mA (12 W max.) or a total of 1 A~4 A (48 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.



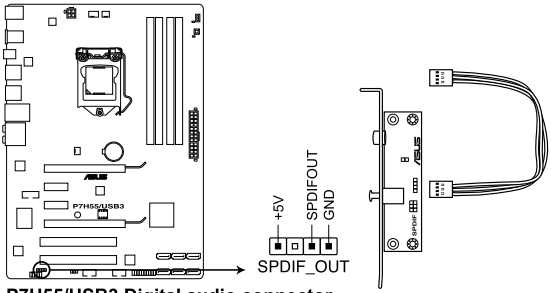
P7H55/USB3 Fan connectors

Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors!

- Only the CPU_FAN and CHA_FAN connectors support the FAN Xpert feature.
- If you install two VGA cards, we recommend that you plug the rear chassis fan cable to the motherboard connector labeled CHA_FAN for better thermal environment.

3. Digital audio connector (4-1 pin SPDIF_OUT)

This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port(s). Connect the S/PDIF Out module cable to this connector, then install the module to a slot opening at the back of the system chassis.

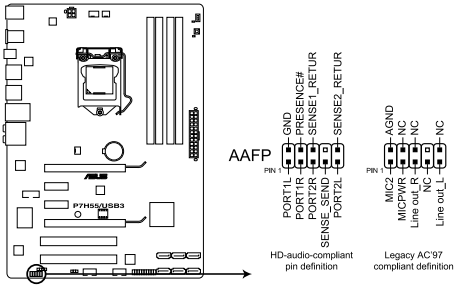


P7H55/USB3 Digital audio connector

The S/PDIF module is purchased separately.

4. Front panel audio connector (10-1 pin AAFP)

This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC`97 audio standard. Connect one end of the front panel audio I/O module cable to this connector.

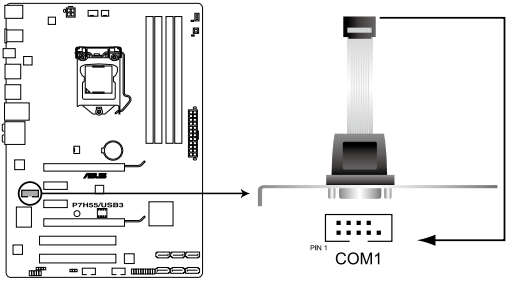


P7H55/USB3 Analog front panel connector

- We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.
- If you want to connect a high-definition front panel audio module to this connector, set the **Front Panel Type** item in the BIOS setup to **[HD Audio]**. If you want to connect an AC'97 front panel audio module to this connector, set the item to **[AC97]**. By default, this connector is set to **[HD Audio]**.

5. Serial port connector (10-1 pin COM1)

This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.

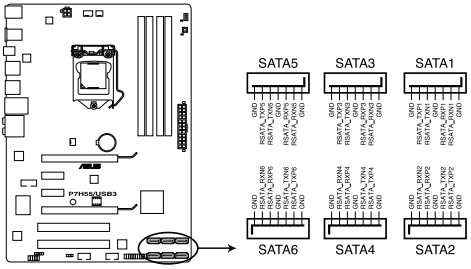


P7H55/USB3 Serial port (COM1) connector

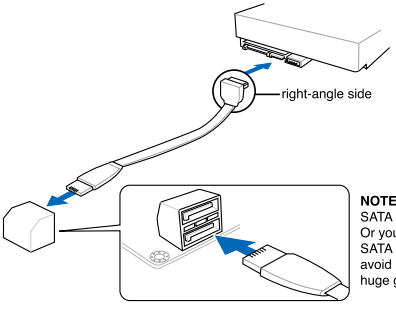
The COM module is purchased separately.

6. Intel® H55 Serial ATA connectors (7-pin SATA1-6)

These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives and optical disc drives.



P7H55/USB3 SATA connectors

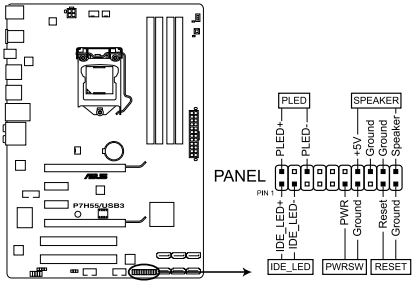


NOTE: Connect the right-angle side of SATA signal cable to SATA device. Or you may connect the right-angle side of SATA cable to the onboard SATA port to avoid mechanical conflict with huge graphics cards.

- These connectors are set to Standard IDE mode by default. In Standard IDE mode, you can connect Serial ATA boot/data hard disk drives to these connectors.
- You must install Windows® XP Service Pack 2 or later version before using Serial ATA hard disk drives.
- When using hot-plug and NCQ, set the **Configure SATA as** item in the BIOS to [AHCI]. See section **Storage Configuration** for details.

7. System panel connector (20-8 pin PANEL)

This connector supports several chassis-mounted functions.



P7H55/USB3 System panel connector

- **System power LED (2-pin PLED)**

  This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **Hard disk drive activity LED (2-pin IDE_LED)**

  This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

- **System warning speaker (4-pin SPEAKER)**

  This 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.

- **ATX power button/soft-off button (2-pin PWRSW)**

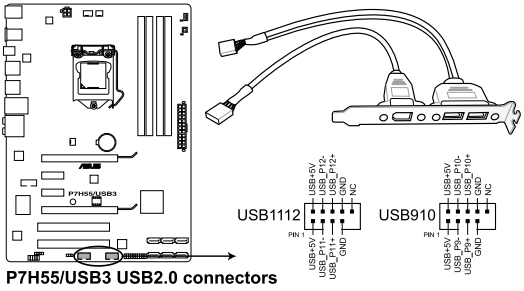
  This connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.

- **Reset button (2-pin RESET)**

  This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

8. USB connectors (10-1 pin USB910, USB1112)

These connectors are for USB 2.0 ports. Connect the USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.



P7H55/USB3 USB2.0 connectors

Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!

You can connect the front panel USB cable to the ASUS Q-Connector (USB, blue) first, and then install the Q-Connector (USB) to the USB connector onboard if your chassis supports front panel USB ports.

The USB module is purchased separately.

1.9 Installing an operating system

This motherboard supports Windows® XP/ 64-bit XP/ Vista™/ 64-bit Vista™/ 7/ 64-bit 7 operating systems (OS). Always install the latest OS version and corresponding updates to maximize the features of your hardware.

- Motherboard settings and hardware options vary. Use the setup procedures presented in this chapter for reference only. Refer to your OS documentation for detailed information.
- Ensure that you install the Windows® XP Service Pack 2 or later versions before installing the drivers for better compatibility and system stability.

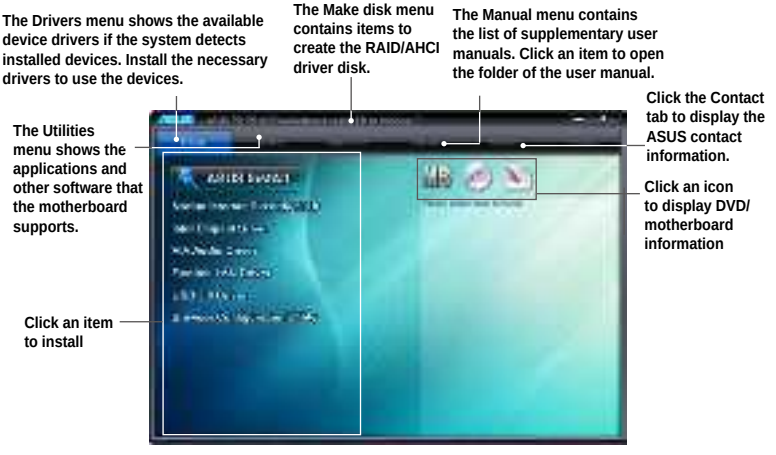
1.10 Support DVD information

The support DVD that comes with the motherboard package contains the drivers, software applications, and utilities that you can install to avail all motherboard features.

The contents of the support DVD are subject to change at any time without notice. Visit the ASUS website at www.asus.com for updates.

1.10.1 Running the support DVD

Place the support DVD into the optical drive. The DVD automatically displays the Drivers menu if Autorun is enabled in your computer. Click each menu tab and select the items you want to install.


The Drivers menu shows the available device drivers if the system detects installed devices. Install the necessary drivers to use the devices.
The Make disk menu contains items to create the RAID/AHCI driver disk.
The Manual menu contains the list of supplementary user manuals. Click an item to open the folder of the user manual.
Click the Contact tab to display the ASUS contact information.
The Utilities menu shows the applications and other software that the motherboard supports.
Click an icon to display DVD/ motherboard information
Click an item to install

If Autorun is NOT enabled in your computer, browse the contents of the Support DVD to locate the file ASSETUP.EXE from the BIN folder. Double-click the ASSETUP.EXE to run the DVD.

Chapter 2

BIOS setup

2.1 Managing and updating your BIOS

Save a copy of the original motherboard BIOS file to a USB flash disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update utility.

2.1.1 ASUS Update

The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment.

- ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).
- This utility is available in the support DVD that comes with the motherboard package.

Installing ASUS Update

To install ASUS Update:

1. Place the support DVD in the optical drive.
2. From the **Main** menu, click the **Utilities** tab, and then click Install **ASUS Update VX.XX.XX**.
3. The ASUS Update utility is copied to your system.

Quit all Windows® applications before you update the BIOS using this utility.

Updating the BIOS

To update the BIOS:

1. From the Windows® desktop, click **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate** to launch the ASUS Update utility.
2. From the dropdown list, select any of the updating process.

   Updating from the Internet

   a. Select Update BIOS from the Internet, and then click Next.

   b. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto elect**. Click **Next**.

   c. From the FTP site, select the BIOS version that you wish to download, then click **Next**.

Updating from a BIOS file

a. Select **Update BIOS from a file**, then click **Next**.

b. Locate the BIOS file from the Open window, then click Open.

3. Follow the onscreen instructions to complete the update process.

The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.

Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the Load Setup Defaults item under the Exit menu. See section **Exit Menu** for details.

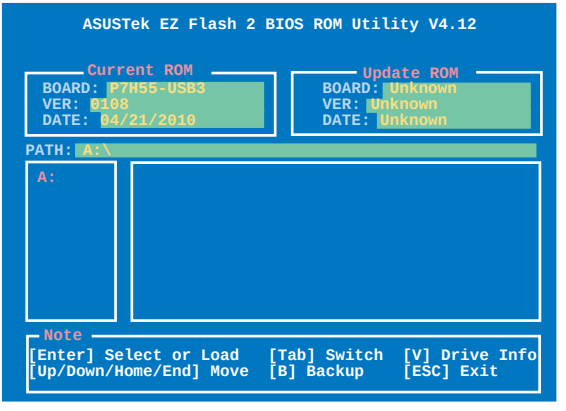
2.1.2 ASUS EZ Flash 2

The ASUS EZ Flash 2 feature allows you to update the BIOS without using an OS-based utility.

Before you start using this utility, download the latest BIOS file from the ASUS website at www.asus.com.

To update the BIOS using EZ Flash 2:

1. Insert the USB flash disk that contains the latest BIOS file to the USB port, then launch EZ Flash 2 in any of these two ways:
   - Press **<Alt> + <F2>** during POST.
   - Enter the BIOS setup program. Go to the **Tools** menu to select **EZ Flash 2** and press **<Enter>** to enable it.
     Press **<Tab>** to switch between drives until the correct BIOS file is found.



2. When the correct BIOS file is found, EZ Flash 2 performs the BIOS update process and automatically reboots the system when done.

- Only a USB flash disk with **FAT 32/16** format and single partition can support the ASUS EZ Flash 2 utility.
- Do not shut down or reset the system while updating the BIOS to prevent system boot failure!

2.1.3 ASUS CrashFree BIOS 3 utility

The ASUS CrashFree BIOS 3 utility is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can restore a corrupted BIOS file using the motherboard support DVD or a USB flash drive that contains the BIOS file.

The BIOS file in the motherboard support DVD may be older than the BIOS file published on the ASUS official website. If you want to use the newer BIOS file, download the file at support.asus.com and save it to a USB flash drive.

Recovering the BIOS

To recover the BIOS

1. Turn on the system.
2. Insert the motherboard support DVD to the optical drive, or the USB flash drive containing the BIOS file to the USB port.
3. The utility automatically checks the devices for the BIOS file. When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.
4. Turn off the system after the utility completes the updating process and power on again.
5. The system requires you to enter BIOS Setup to recover BIOS setting. To ensure system compatibility and stability, we recommend that you press <F2> to load default BIOS values.

DO NOT shut down or reset the system while recovering the BIOS! Doing so can cause system boot failure!

2.2 BIOS setup program

Use the BIOS Setup program to update the BIOS or configure its parameters. The BIOS screens include navigation keys and brief online help to guide you in using the BIOS Setup program.

Entering BIOS Setup at startup

To enter BIOS Setup at startup:

- Press <Delete> during the Power-On Self Test (POST). If you do not press <Delete>, POST continues with its routines.

Entering BIOS Setup after POST

To enter BIOS Setup after POST:

- Press **<Ctrl>+<Alt>+<Del>** simultaneously.
- Press the reset button on the system chassis.
- Press the power button to turn the system off then back on. Do this option only if you failed to enter BIOS Setup using the first two options.

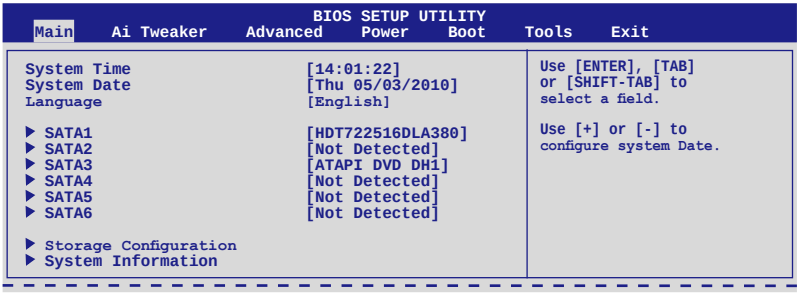
Using the **power button**, **reset button**, or the **<Ctrl>+<Alt>+<Del>** keys to force reset from a running operating system can cause damage to your data or system. We recommend to always shut down the system properly from the operating system.

- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Setups Default** item under the Exit Menu. See section **2.9 Exit menu**.
- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website at www.asus.com to download the latest BIOS file for this motherboard.

2.3 Main menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information. You can also set the system time and date and BIOS language in this menu.

Refer to BIOS menu screen for information on the menu screen items and how to navigate through them.



2.3.1 SATA 1-6

While entering Setup, the BIOS automatically detects the presence of IDE/SATA devices. There is a separate submenu for each IDE/SATA device. Select a device item then press <Enter> to display the SATA device information.

The BIOS automatically detects the values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring). These values are not user-configurable. These items show N/A if no IDE device is installed in the system.

Type [Auto]

Allows you to select the type of SATA drive installed.

[Not Installed] Select this option if no SATA drive is installed.

[Auto] Allows automatic selection of the appropriate SATA device type.

[CDROM] Select this option if you are specifically configuring a CD-ROM drive.

[ARMD] Select [ARMD] (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drive.

LBA/Large Mode [Auto]

Enables or disables the LBA (Logical Block Addressing) mode.

[Auto] Select [Auto] to enable the LBA mode (Logical Block Addressing mode) if the device supports this mode, and if the device was not previously formatted with LBA mode disabled.

[Disabled] Disables this function.

Block (Multi-Sector Transfer) M [Auto]

Enables or disables data multi-sectors transfers.

[Auto] When set to [Auto], the data transfer from and to the device occurs in multiple sectors at a time if the device supports multi-sector transfer feature.

[Disabled] When set to [Disabled], the data transfer from and to the device occurs one sector at a time.

PIO Mode [Auto]

[Auto] Allows automatic selection of the PIO (Programmed input/output) modes, which correspond to different data transfer rates.

[0] [1] [2] [3] [4] Set the PIO mode to Mode 0, 1, 2, 3, or 4.

DMA Mode [Auto]

DMA (Direct Memory Access) allows your computer to transfer data to and from the hardware devices installed with much less CPU overhead.

The DMA mode consists of SDMA (single-word DMA), MDMA (multi-word DMA), and UDMA (Ultra DMA). Setting to [Auto] allows automatic selection of the DMA mode.

SMART Monitoring [Auto]

[Auto] Allows automatic selection of the S.M.A.R.T (Smart Monitoring, Analysis, and Reporting Technology).

[Enabled] Enables the S.M.A.R.T feature.

[Disabled] Disables the S.M.A.R.T feature.

32Bit Data Transfer [Enabled]

[Enabled] Sets the IDE controller to combine two 16-bit reads from the hard disk into a single 32-bit double word transfer to the processor. This makes more efficient use of the PCI bus as fewer transactions are needed for the transfer of a particular amount of data.

[Disabled] Disables this function.

2.3.2 Storage Configuration

The Storage Configuration menu allows you to configure your storage devices. Select an item then press <Enter> to display the submenu.

SATA Configuration [Enhanced]

Configuration options: [Disabled] [Compatible] [Enhanced]

Configure SATA as [IDE]

Sets the configuration for the Serial ATA connectors supported by the Southbridge chip. Configuration options: [IDE] [AHCI]

- If you want to use the Serial ATA hard disk drives as Parallel ATA physical storage devices, keep the default setting [IDE].
- If you want the Serial ATA hard disk drives to use the Advanced Host Controller Interface (AHCI), set this item to [AHCI]. The AHCI allows the onboard storage driver to enable advanced Serial ATA features that increases storage performance on random workloads by allowing the drive to internally optimize the order of commands.

Hard Disk Write Protect [Disabled]

Disables or enables device write protection. This will be effective only if the device is accessed through BIOS. Configuration option: [Disabled] [Enabled]

IDE Detect Time Out (Sec) [35]

Selects the time out value for detecting ATA/ATAPI devices. Configuration options: [0] [5] [10] [15] [20] [25] [30] [35]

2.3.3 AHCI Configuration

This menu is the section for AHCI configuration. It appears only when you set the item Configure SATA as from the sub-menu of SATA Configuration to [AHCI].

SATA Port1–6 [XXXX]

Displays the status of auto-detection of SATA devices.

SATA Port1 [Auto]

Allows you to select the type of device connected to the system.
Configuration options: [Auto] [Not Installed]

SMART Monitoring [Enabled]

Allows you to set the Self-Monitoring, Analysis and Reporting Technology.
Configration options: [Disabled] [Enabled]

2.3.4 System Information

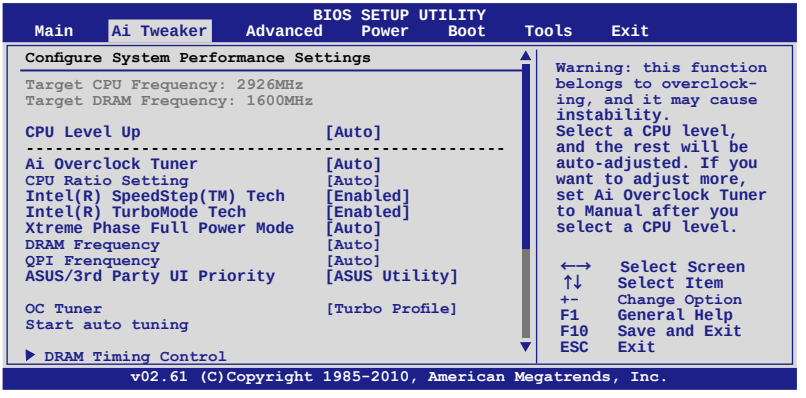
This menu gives you an overview of the general system specifications. The BIOS automatically detects the BIOS information, CPU specification, and system memory in this menu.

2.4 Ai Tweaker menu

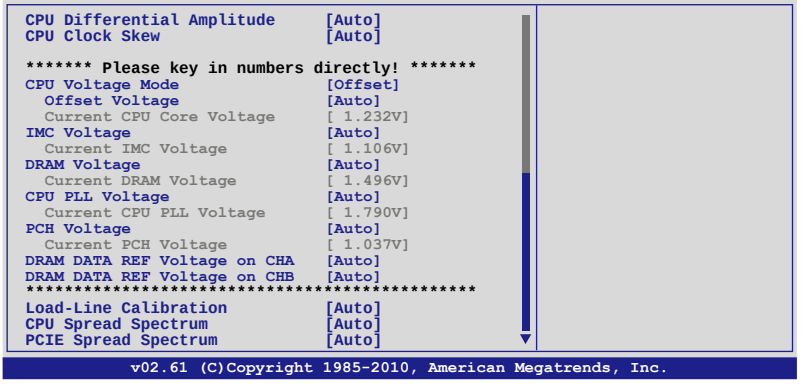
The Ai Tweaker menu items allow you to configure overclocking-related items.

Be cautious when changing the settings of the Ai Tweaker menu items. Incorrect field values can cause the system to malfunction.

The configuration options for this chapter vary depending on the CPU and DIMM model you installed on the motherboard.


BIOS SETUP UTILITY
Main Ai Tweaker Advanced Power Boot Tools Exit
Configure System Performance Settings
Target CPU Frequency: 2926MHz
Target DRAM Frequency: 1600MHz
CPU Level Up [Auto]
Ai Overclock Tuner [Auto]
CPU Ratio Setting [Auto]
Intel(R) SpeedStep(TM) Tech [Enabled]
Intel(R) TurboMode Tech [Enabled]
Xtreme Phase Full Power Mode [Auto]
DRAM Frequency [Auto]
QPI Frenquency [Auto]
ASUS/3rd Party UI Priority [ASUS Utility]
OC Tuner [Turbo Profile]
Start auto tuning
DRAM Timing Control
Warning: this function belongs to overclocking, and it may cause instability. Select a CPU level, and the rest will be auto-adjusted. If you want to adjust more, set Ai Overclock Tuner to Manual after you select a CPU level.
←→ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.61 (C)Copyright 1985-2010, American Megatrends, Inc.

Scroll down to display the following items:


CPU Differential Amplitude [Auto]
CPU Clock Skew [Auto]
******* Please key in numbers directly! *******
CPU Voltage Mode [Offset]
Offset Voltage [Auto]
Current CPU Core Voltage [1.232V]
IMC Voltage [Auto]
Current IMC Voltage [1.106V]
DRAM Voltage [Auto]
Current DRAM Voltage [1.496V]
CPU PLL Voltage [Auto]
Current CPU PLL Voltage [1.790V]
PCH Voltage [Auto]
Current PCH Voltage [1.037V]
DRAM DATA REF Voltage on CHA [Auto]
DRAM DATA REF Voltage on CHB [Auto]
Load-Line Calibration [Auto]
CPU Spread Spectrum [Auto]
PCIE Spread Spectrum [Auto]
v02.61 (C)Copyright 1985-2010, American Megatrends, Inc.

2.4.1 CPU Level Up [Auto]

Allows you to select a CPU level, and the related parameters will be automatically adjusted according to the selected CPU level. If you want to manually configure the settings in detail, set **Ai Overclock Tuner** to [Manual] after selecting a CPU level.
Configuration options: [Auto] [Crazy-3.08G] [Crazy-3.2G] [Crazy-3.52G]

The configuration options vary depending on the CPU model you install on the motherboard.

2.4.2 Ai Overclock Tuner [Auto]

Allows selection of CPU overclocking options to achieve desired CPU internal frequency. Select either one of the preset overclocking configuration options:

Manual	Allows you to individually set overclocking parameters.
Auto	Loads the optimal settings for the system.
D.O.C.P	Overclocks DRAM frequency by adjusting BCLK frequency.
X.M.P.	If you install memory module(s) supporting the eXtreme Memory Profile (X.M.P.) Technology, choose this item to set the profile(s) supported by your memory module(s) for optimizing the system performance.
CPU Level UP	Loads settings for using CPU Level UP.

The configuration options for the following sub-item vary depending on the DIMMs you install on the motherboard.

DRAM O.C. Profile [DDR3-1800MHz]

This item appears only when you set the **Ai Overclock Tuner** item to [D.O.C.P.] and allows you to select a DRAM O.C. profile, which applies different settings to DRAM frequency, DRAM timing and DRAM voltage.
Configuration options: [DDR3-1800MHz] [DDR3-1866MHz] [DDR3-2000MHz] [DDR3-2133MHz] [DDR3-2200MHz]

DRAM Frequency (MHz)	Lynnfield CPU Frequency (GHz)			Clarkdale CPU Frequency (GHz)	
	2.66	2.8	2.93	2.8	Others
1333	Auto	Auto	Auto	D.O.C.P.	Auto
1600	D.O.C.P.	Auto	Auto	D.O.C.P.	D.O.C.P.
Above 1600	D.O.C.P.	D.O.C.P.	D.O.C.P.	N/A	N/A

- When using DIMMs with a frequncy higher than the Intel® CPU spec, use this ASUS exclusive **DRAM O.C. Profile** function to overclock the DRAM.
- Adjust BCLK frequency to obtain a better performance after applying the D.O.C.P function.

eXtreme Memory Profile [High Performance]

This item appears only when you set the **Ai Overclock Tuner** item to [X.M.P.] and allows you to select the X.M.P. mode supported by your memory module.
Configuration options: [Profile #1] [Profile #2]

To obtain the best performance of the X.M.P. DIMM or 1600MHz DIMM, install only one DIMM on each memory channel.

2.4.3 CPU Ratio Setting [Auto]

Allows you to adjust the ratio between CPU Core Clock and BCLK Frequency. Use the <+> and <-> keys to adjust the value. The valid value ranges differently according to your CPU model.

2.4.4 Intel(R) SpeedStep(TM) Tech [Enabled]

When set to [Disabled], the CPU runs at its default speed. When set to [Enabled], the CPU speed is controlled by the operating system. Configuration options: [Disabled] [Enabled]

2.4.5 Intel(R) TurboMode Tech [Enabled]

This item appears only if you set the **CPU Ratio Setting** item to [Auto]. Turbo mode allows processor cores to run faster than marked frequency in specific condition.
Configuration options: [Disabled] [Enabled]

2.4.6 Xtreme Phase Full Power Mode [Auto]

[Auto] Automatic configuration.

[Enabled] Enables Full Power Mode to ensure the best CPU overclocking performance.

BCLK Frequency [XXX]

This item appears when you set the **AI Overclock Tuner** item to [Manual], [D.O.C.P.] or [X.M.P.] and allows you to adjust the Internal Base Clock (BCLK). Use the <+> and <-> keys to adjust the value. You can also type the desired value using the numeric keypad. The values range from 80 to 500.

PCIE Frequency [XXX]

This item appears only when you set the **AI Overclock Tuner** item to [Manual] and allows you to set the PCI Express frequency. Use the <+> and <-> keys to adjust the PCIE frequency. The values range from 100 to 200.

2.4.7 DRAM Frequency [Auto]

Allows you to set the DDR3 operating frequency.
Configuration options when set the **AI Overclock Tuner** item to [Auto] or [X.M.P.]:
[Auto] [DDR3-800MHz] [DDR3-1066MHz] [DDR3-1333MHz] [DDR3-1600]
Configuration options when set the **AI Overclock Tuner** item to [D.O.C.P]:
[Auto] [DDR3-900MHz] [DDR3-1200MHz] [DDR3-1500MHz] [DDR3-1800]

- The **DRAM Frequency** configuration options vary with the **BCLK Frequency** item settings.
- According to Intel CPU spec, CPUs with a core frequency of 2.66G support the maximum DIMM frequency of up to DDR3 1333. To use DIMMs of a higher frequency with a 2.66G CPU, enable the **DRAM O.C. Profile** feature in BIOS. Refer to section **2.4.2 Ai Overclock Tuner** for details.

Selecting a very high DRAM frequency may cause the system to become unstable! If this happens, revert to the default setting.

2.4.8 QPI Frequency [Auto]

Allows you to set the QuickPath Interconnect (QPI) frequency.
Configuration options: [Auto] [4270MHz] [4800MHz]

2.4.9 ASUS/3rd Party UI Priority [ASUS Utility]

[ASUS Utility] Prioritizes the usage of ASUS utilities (ASUS EPU, TurboV EVO, etc.). Other 3rd party OC utilities may not be full-functioned.

[3rd Party Utility] Prioritizes 3rd party OC utilities (IXTU, SetFS, etc.). ASUS utilities can't be launched.

2.4.10 OC Tuner [Turbo Profile]

OC Tuner automatically overclocks the frequency and voltage of CPU and DRAM. Choose [Good Performance] or [Better Performance] as a stable setting for daily use. Choose [Turbo Profile] as an advanced overclocking setting for special purposes.
Configuration options: [Good Performance] [Better Performance] [Turbo Profile]

2.4.11 Start auto tuning

Press <Enter> to start auto tuning. It takes around 5 minutes, and the system will reboot for several times before finish. After auto tuning, the C-State feature will be disabled.

2.4.12 DRAM Timing Control [Auto]

The items in this menu allow you to set the DRAM timing control features.

The configuration options for some of the following items vary depending on the DIMMs you install on the motherboard.

1st Information: 9-9-9-24-5-88-12-8-24-0

The values vary depending on your settings of the following sub-items:

CAS# Latency [Auto]

Configuration options: [Auto] [3 DRAM Clock] [4 DRAM Clock] – [10 DRAM Clock] [11 DRAM Clock]

RAS# to CAS# Delay [Auto]

Configuration options: [Auto] [3 DRAM Clock] [4 DRAM Clock] – [14 DRAM Clock] [15 DRAM Clock]

RAS# PRE Time [Auto]

Configuration options: [Auto] [3 DRAM Clock] [4 DRAM Clock] – [14 DRAM Clock] [15 DRAM Clock]

RAS# ACT Time [Auto]

Configuration options: [Auto] [3 DRAM Clock] [4 DRAM Clock] – [30 DRAM Clock] [31 DRAM Clock]

RAS# to RAS# Delay [Auto]

Configuration options: [Auto] [1 DRAM Clock] – [7 DRAM Clock]

REF Cycle Time [Auto]

Configuration options: [Auto] [48 DRAM Clock] [60 DRAM Clock] [72 DRAM Clock] [82 DRAM Clock] [88 DRAM Clock] [90 DRAM Clock] [100 DRAM Clock] [110 DRAM Clock] [114 DRAM Clock] [118 DRAM Clock] [122 DRAM Clock] [126 DRAM Clock] [130 DRAM Clock] [134 DRAM Clock] [138 DRAM Clock] [142 DRAM Clock] [150 DRAM Clock] [160 DRAM Clock] [170 DRAM Clock] [180 DRAM Clock] [190 DRAM Clock] [200 DRAM Clock]

WRITE Recovery Time [Auto]

Configuration options: [Auto] [1 DRAM Clock] – [18 DRAM Clock]

READ to PRE Time [Auto]

Configuration options: [Auto] [1 DRAM Clock] – [15 DRAM Clock]

FOUR ACT WIN Time [Auto]

Configuration options: [Auto] [1 DRAM Clock] – [63 DRAM Clock]

Back-To-Back CAS# Delay [Auto]

Configuration options: [Auto] [4 DRAM Clock] – [32 DRAM Clock]

2nd Information: 2N-44-0

The values vary depending on your settings of the following sub-items:

Timing Mode [Auto]

Configuration options: [Auto] [1N] [2N] [3N]

Round Trip Latency on CHA/B [Auto]

[Auto] [Advance 15 Clock]–[Advance 1 Clock] [Normal] [Delay 1 Clock] [Delay 15 Clock]

3rd Information: 6-6-18-10-10-10-7-6-4-7-7-4

The values vary depending on your settings of the following sub-items:

WRITE to READ Delay(DD) [Auto]

Configuration options: [Auto] [1 DRAM Clock] – [8 DRAM Clock]

WRITE to READ Delay(DR) [Auto]

Configuration options: [Auto] [1 DRAM Clock] – [8 DRAM Clock]

WRITE to READ Delay(SR) [Auto]

Configuration options: [Auto] [10 DRAM Clock] – [22 DRAM Clock]

READ to WRITE Delay(DD) [Auto]

Configuration options: [Auto] [2 DRAM Clock] – [14 DRAM Clock]

READ to WRITE Delay(DR) [Auto]

Configuration options: [Auto] [2 DRAM Clock] – [14 DRAM Clock]

READ to WRITE Delay(SR) [Auto]

Configuration options: [Auto] [2 DRAM Clock] – [14 DRAM Clock]

READ to READ Delay(DD) [Auto]

Configuration options: [Auto] [2 DRAM Clock] – [9 DRAM Clock]

READ to READ Delay(DR) [Auto]

Configuration options: [Auto] [2 DRAM Clock] – [9 DRAM Clock]

READ to READ Delay(SR) [Auto]

Configuration options: [Auto] [4 DRAM Clock] [6 DRAM Clock]

WRITE to WRITE Delay(DD) [Auto]

Configuration options: [Auto] [2 DRAM Clock] – [9 DRAM Clock]

WRITE to WRITE Delay(DR) [Auto]

Configuration options: [Auto] [2 DRAM Clock] – [9 DRAM Clock]

WRITE to WRITE Delay(SR) [Auto]

Configuration options: [Auto] [4 DRAM Clock] [6 DRAM Clock]

2.4.13 CPU Differential Amplitude [Auto]

Different AMP might enhance BCLK overclocking ability.
Configuration options: [Auto] [700mV] [800mV] [900mV] [1000mV]

2.4.14 CPU Clock Skew [Auto]

Adjusting this item may help enhancing BCLK overclocking ability. You may need to adjust the **CPU Clock Skew** item at the same time.
Configuration options: [Auto] [Normal] [Delay 100ps]–[Delay 1500ps]

Some of the following items are adjusted by typing the desired values using the numeric keypad and press the <Enter> key. You can also use the <+> and <-> keys to adjust the value. To restore the default setting, type [auto] using the keyboard and press the <Enter> key.

2.4.15 CPU Voltage Mode [Offset]

Allows you to set the CPU Voltage Mode. Different sub-items appear according to the **CPU Voltage Mode** item setting. Configuration options: [Offset] [Manual]

Offset Voltage [Auto]

This item appears only when you set the **CPU Voltage Mode** item to [Offset] and allows you to set the Offset voltage. The values range from 0.00625V to 0.50000V with a 0.00625V interval.

Offset Sign [-]

This item appears only when you set the **Offset Voltage** item to a value other than [Auto].

[+] To offset the voltage by a positive value.

[–] To offset the voltage by a negative value.

Fixed Voltage [Auto]

This item appears only when you set the **CPU Voltage Mode** item to [Manual] and allows you to set a fixed CPU voltage. The values range from 0.85V to 1.7V with a 0.00625V interval.

Refer to the CPU documentation before setting the CPU Vcore voltage. Setting a high VCore voltage may damage the CPU permanently, and setting a low VCore voltage may make the system unstable.

2.4.16 IMC Voltage [Auto]

Allows you to set the CPU Integrated Memory Controller voltage. The values range from 1.1V to 1.7V with a 0.00625V interval.

2.4.17 DRAM Voltage [Auto]

Allows you to set the DRAM voltage. The values range from 1.2V to 2.0V with a 0.0125V interval.

According to Intel CPU spec, DIMM voltage below 1.65V is recommended to protect the CPU.

2.4.18 CPU PLL Voltage [Auto]

Allows you to set the CPU PLL voltage. The values range from 1.8V to 2.5V with a 0.0125V interval.

2.4.19 PCH Voltage [Auto]

Allows you to set the Platform Controller Hub voltage. The values range from 1.05V to 1.5V with a 0.0125V interval.

- The values of the **IMC Voltage**, **DRAM Voltage**, **CPU PLL Voltage** and **PCH Voltage** items are labeled in different color, indicating the risk levels of high voltage settings. Refer to the table on the next page for details.
- The system may need better cooling system to work stably under high voltage settings.

	Blue	Yellow	Purple	Red
IMC Voltage	1.10000V– 1.16875V	1.17500V– 1.22500V	1.23125V– 1.30000V	1.30625V– 1.70000V
DRAM Voltage	1.2000V– 1.5625V	1.5750V–1.6250V	1.6375V–1.6875V	1.7000V–2.0000V
CPU PLL Voltage	1.8000V– 1.8625V	1.8750V– 1.9250V	1.9375- 1.9875	2.0000V– 2.5000V
PCH Voltage	1.0500V- 1.1875V	1.2000V 1.3000V	1.3125V 1.4500V	1.4625V- 1.5000V

2.4.20 DRAM DATA REF Voltage on CHA/B [Auto]

Allows you to set the DRAM DATA Reference Voltage on Channel A/B. The values range from 0.395x to 0.630x with a 0.005x interval. Different ratio might enhance DRAM overclocking ability.

2.4.21 Load-Line Calibration [Auto]

[Auto] Automatic configuration.

[Disabled] Follow Intel specifications.

[Enabled] Improve CPU VDroop directly.

2.4.22 CPU Spread Spectrum [Auto]

[Auto] Automatic configuration.

[Disabled] Enhances the BCLK overclocking ability.

[Enabled] Sets to [Enabled] for EMI control.

2.4.23 PCIE Spread Spectrum [Auto]

[Auto] Automatic configuration.

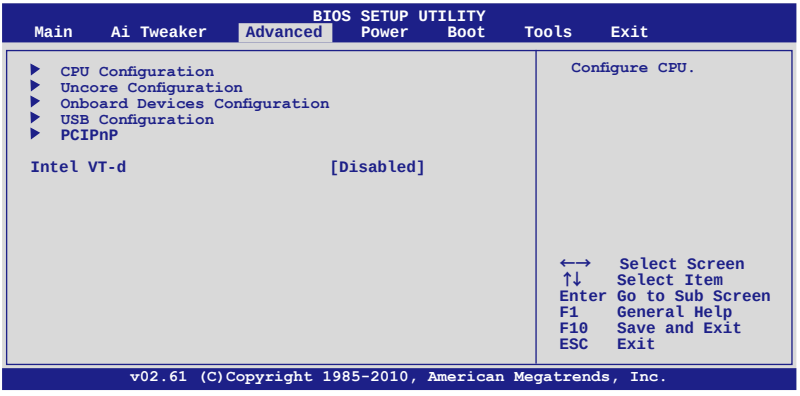
[Disabled] Enhances the PCIE overclocking ability.

[Enabled] Sets to [Enabled] for EMI control.

2.5 Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

Be cautious when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.



2.5.1 CPU Configuration

The items in this menu show the CPU-related information that the BIOS automatically detects.

The items shown in this screen may be different due to the CPU you installed.

CPU Ratio Setting [Auto]

Allows you to adjust the ratio between CPU Core Clock and BCLK Frequency. Use the <+> and <-> keys to adjust the value. The valid value ranges differently according to your CPU model.

C1E Support [Enabled]

[Enabled] Enables the C1E support function. This item should be enabled in order to enable the Enhanced Halt Sate.

[Disabled] Disables this function.

Hardware Prefetcher [Enabled]

[Enabled] Enables the Hardware Prefetcher function. This item should be enabled in order to enable the L2 cache (MLC) Streamer Prefetcher for tuning performance of the specific application.

[Disabled] Disables this function.

Adjacent Cache Line Prefetcher [Enabled]

[Enabled] Enables the Adjacent Cache Line Prefetcher function. This item should be enabled in order to enable the L2 cache (MLC) Spatial Prefetcher for tuning performance of the specific application.

[Disabled] Disables this function.

Max CPUID Value Limit [Disabled]

[Enabled] Allows legacy operating systems to boot even without support for CPUs with extended CPUID functions.

[Disabled] Disables this function.

Intel(R) Virtualization Tech [Enabled]

[Enabled] Allows a hardware platform to run multiple operating systems separately and simultaneously, enabling one system to virtually function as several systems.

[Disabled] Disables this function.

CPU TM function [Enabled]

[Enabled] Enables the overheated CPU to throttle its clock speed to cool down.

[Disabled] Disables this function.

Execute-Disable Bit Capability [Enabled]

[Enabled] Enables the No-Execution Page Protection Technology.

[Disabled] Forces the XD feature flag to always return to zero (0).

Intel(R) HT Technology [Enabled]

[Enabled] Enables the Intel Hyper-Threading Technology.

[Disabled] Only one thread per activated CPU core is enabled.

Active Processor Cores [All]

[All] Activate all CPU cores in the processor package.

[1] Activate only 1 CPU core in the processor package.

[2] Activate 2 CPU cores in the processor package.

A20M [Disabled]

[Enabled] Legacy OSes and APs may need this function enabled.

[Disabled] Disables this function.

Intel(R) SpeedStep (TM) Tech [Enabled]

[Enabled] The CPU speed is controlled by the operating system.

[Disabled] The CPU runs at its default speed.

Intel(R) TurboMode tech [Enabled]

[Enabled] Allows processor cores to run faster than marked frequency in specific condition.

[Disabled] Disables this function.

Intel(R) C-STATE Tech [Enabled]

[Enabled] Allows the CPU to save more power under idle mode. Enable this item only when you install a C-State Technology-supported CPU.

[Disabled] Disables this function.

C State package limit setting [Auto]

This item appears only when you set the Intel(R) C-STATE Tech item to [Enabled]. We recommend that you set this item to [Auto] for BIOS to automatically detect the C-State mode supported by your CPU. Configuration options: [Auto] [C1] [C3] [C6]

2.5.2 Uncore Configuration

The Uncore Configuration menu allows you to change the advanced chipset settings.

Memory Remap Feature [Enabled]

[Disabled] Do not allow remapping of memory.

[Enabled] Allows for the segment of system memory that was previously overwritten by PCI devices to be remapped above the total physical memory.

2.5.3 Onboard Device Configuration

HDA Controller [Enabled]

[Enabled] Enables the High Definition Audio Controller.

[Disabled] Disables the controller.

Front Panel Type [HD Audio]

[AC97] Set the front panel audio connector (AAFP) mode to legacy AC'97

[HD Audio] Set the front panel audio connector (AAFP) mode to high-definition audio.

Realtek LAN1 [Enabled]

[Enabled] Enables Realtek LAN Controller.

[Disabled] Disables Realtek LAN Controller.

LAN Boot ROM [Disabled]

This item appears only when you enable the previous item(s).

[Disabled] Disables Realtek LAN Boot ROM.

[Enabled] Enables Realtek LAN Boot ROM.

Serial Port1 Address [3F8/IRQ4]

Allows you to select the Serial Port1 base address.
Configuration options: [Disabled] [3F8/IRQ4] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3]

Onboard USB 3.0 Controller [Enabled]

[Enabled] Enables the USB 3.0 controller.

[Disabled] Disables the controller.

2.5.4 USB Configuration

The items in this menu allows you to change the USB-related features. Select an item then press <Enter> to display the configuration options.

The USB Devices Enabled item shows the auto-detected values. If no USB device is detected, the item shows None.

USB Functions [Enabled]

[Enabled] Enables the USB Host Controllers.

[Disabled] Disables the controllers.

The following items appear only when you set USB Support to [Enabled].

Legacy USB Support [Auto]

[Disabled] Disables the function.

[Enabled] Enables the support for USB devices on legacy operating systems (OS).

[Auto] Allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.

BIOS EHCI Hand-off [Enabled]

[Disabled] Disables the function.

[Enabled] Enables the support for operating systems without an EHCI hand-off feature.

2.5.5 PCIPnP

The PCIPnP menu items allow you to change the advanced settings for PCI/PnP devices.

Plug And Play O/S [No]

[Yes] When set to [Yes] and if you install a Plug and Play operating system, the operating system configures the Plug and Play devices not required for boot.

[No] When set to [No], BIOS configures all the devices in the system.

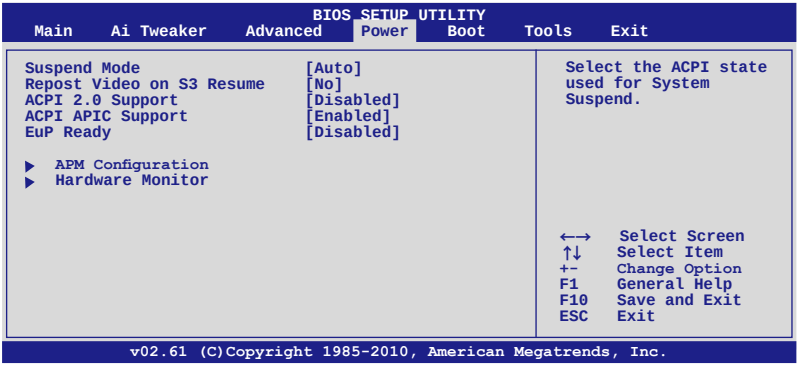
2.5.6 Intel VT-d Configuration [Disabled]

[Disabled] Disables the Intel Virtualization Technology for Directed I/O.

[Enabled] Enables the Intel Virtualization Technology for Directed I/O.

2.6 Power menu

The Power menu items allow you to change the settings for the Advanced Power Management (APM). Select an item then press <Enter> to display the configuration options.



2.6.1 Suspend Mode [Auto]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend.

[S1 (POS) only] Sets the APCI suspend mode to S1/POS (Power On Suspend).

[S3 only] Sets the APCI suspend mode to S3/STR (Suspend To RAM).

[Auto] The system automatically configures the ACPI suspend mode.

2.6.2 Repost Video on S3 Resume [No]

Determines whether to invoke VGA BIOS POST on S3/STR resume.

[No] The system will not invoke VGA BIOS POST on S3/STR resume.

[Yes] The system invokes VGA BIOS POST on S3/STR resume.

2.6.3 ACPI 2.0 Support [Disabled]

[Disabled] When set to [Disabled], the system will not add additional tables as per ACPI 2.0 specifications.

[Enabled] When set to [Enabled], the system adds additional tables as per ACPI 2.0 specifications.

2.6.4 ACPI APIC Support [Enabled]

[Disabled] When set to [Disabled], the system disable the Advanced Configuration and Power Interface (ACPI) support in the Advanced Programmable Interrupt Controller (APIC).

[Enabled] When set to [Enabled], the ACPI APIC table pointer is included in the RSDT pointer list.

2.6.5 EuP Ready [Disabled]

[Disabled] Disables the Energy Using Products (EuP) Ready function.

[Enabled] Allows BIOS to switch off some power at S5 state to get system ready for the EuP requirement. When set to [Enabled], power for WOL, WO_USB, audio and onboard LEDs will be switched off at S5 state.

2.6.6 APM Configuration

Restore On AC Power Loss [Power Off]

[Power Off] The system goes into off state after an AC power loss.

[Power On] The system goes into on state after an AC power loss.

[Last State] The system goes into either off or on state, whatever the system state was before the AC power loss.

Power On By RTC Alarm [Disabled]

[Disabled] Disables RTC to generate a wake event.

[Enabled] When set to [Enabled], the items **RTC Alarm Date (Days) / System Time** will become user-configurable with set values.

Power On By External Modems [Disabled]

[Disabled] Disables to power up the computer when the external modem receives a call while the computer is in Soft-off mode.

[Enabled] The computer could be powered up when the external modem receives a call while the computer is in Soft-off mode.

The computer cannot receive or transmit data until the computer and applications are fully running. Thus, connection cannot be made on the first try. Turning an external modem off and then back on while the computer is off causes an initialization string that turns the system power on.

Power On By PCI Devices [Disabled]

[Disabled] Disables the PME to wake up from S5 by PCI devices.

[Enabled] Allows you to turn on the system through a PCI LAN or modem card. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.

Power On By PCIE Devices [Disabled]

Allows you to enable or disable the PCIE devices to generate a wake event.

[Disabled] Disables the PCIE devices to generate a wake event.

[Enabled] Enables the PCIE devices to generate a wake event.

Power On By PS/2 Keyboard [Disabled]

[Disabled] Disables the Power On by a PS/2 keyboard.

[Enabled] Sets specific keys on the PS/2 keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.

Power On By PS/2 Mouse [Disabled]

[Disabled] Disables the Power On by a PS/2 mouse.

[Enabled] Enables the Power On by a PS/2 mouse. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.

2.6.7 Hardware Monitor

CPU/MB Temperature [xxxºC/xxxºF]

The onboard hardware monitor automatically detects and displays the CPU and motherboard temperatures. Select **Ignored** if you do not wish to display the detected temperatures.

CPU Fan Speed [xxxxRPM] or [Ignored] / [N/A]
Chassis Fan 1 Speed [xxxxRPM] or [Ignored] / [N/A]
Power Fan Speed [xxxxRPM] or [Ignored] / [N/A]

The onboard hardware monitor automatically detects and displays the CPU, chassis, and power fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows **N/A**. Select **Ignored** if you do not wish to display the detected speed.

CPU Q-Fan Control [Disabled]

[Disabled] Disables the CPU Q-Fan control feature.

[Enabled] Enables the CPU Q-Fan control feature.

CPU Fan Profile [Standard]

This item appears only when you enable the **CPU Q-Fan Control** feature and allows you to set the appropriate performance level of the CPU fan.

[Standard] Sets to [Standard] to make the CPU fan automatically adjust depending on the CPU temperature.

[Silent] Sets to [Silent] to minimize the fan speed for quiet CPU fan operation.

[Turbo] Sets to [Turbo] to achieve maximum CPU fan speed.

[Manual] Sets to [Manual] to assign detailed fan speed control parameters.

The following items appear only when you set the **CPU Q-Fan Profile** item to [Manual].

CPU Upper Temperature [70ºC/158ºF]

Sets the upper limit of the CPU temperature.
Configuration options: [40ºC/104ºF] [50ºC/122ºF] [60ºC/140ºF] [70ºC/158ºF] [80ºC/176ºF] [90ºC/194ºF]

CPU Fan Max. Duty Cycle [100%]

Sets the maximum CPU fan duty cycle. When the CPU temperature reaches the upper limit, the CPU fan will operate at the maximum duty cycle.
Configuration options: [20%] [30%] [40%] [50%] [60%] [70%] [80%] [90%] [100%]

CPU Lower Temperature [40ºC/104ºF]

Displays the lower limit of the CPU temperature.

CPU Fan Min. Duty Cycle [20%]

Chassis Q-Fan Control [Disabled]

[Disabled] Disables the Chassis Q-Fan control feature.

[Enabled] Enables the Chassis Q-Fan control feature.

Chassis Fan Profile [Standard]

This item appears only when you enable the **Chassis Q-Fan Control** feature and allows you to set the appropriate performance level of the chassis fan.

[Standard] Sets to [Standard] to make the chassis fan automatically adjust depending on the chassis temperature.

[Silent] Sets to [Silent] to minimize the fan speed for quiet chassis fan operation.

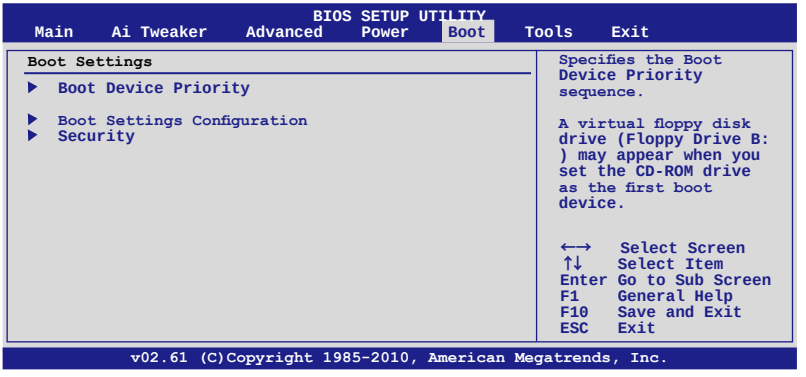
[Turbo] Sets to [Turbo] to achieve maximum chassis fan speed.

CPU Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. Select **Ignored** if you do not want to detect this item.

2.7 Boot menu

The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the submenu.



2.7.1 Boot Device Priority

1st ~ xxth Boot Device [Removable Dev.]

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.
Configuration options: [Removable Dev.] [Hard Drive] [ATAPI CD-ROM] [Disabled]

2.7.2 Boot Settings Configuration

Quick Boot [Enabled]

[Disabled] When set to [Disabled], BIOS performs all the POST items.

[Enabled] When set to [Enabled], BIOS skips some power on self tests (POST) while booting to decrease the time needed to boot the system.

Full Screen Logo [Enabled]

[Disabled] Disables the full screen logo display feature.

[Enabled] Enables the full screen logo display feature.

Set this item to [Enabled] to use the ASUS MyLogo 2™ feature.

AddOn ROM Display Mode [Force BIOS]

[Force BIOS] The third-party ROM messages will be forced to display during the boot sequence.

[Keep Current] The third-party ROM messages will be displayed only if the third-party manufacturer had set the add-on device to do so.

Bootup Num-Lock [On]

[Off] Sets the power-on state of the NumLock to [Off].

[On] Sets the power-on state of the NumLock to [On].

Wait For 'F1' If Error [Enabled]

[Disabled] Disables this function.

[Enabled] The system waits for the <F1> key to be pressed when error occurs.

Hit 'DEL' Message Display [Enabled]

[Disabled] Disables this function.

[Enabled] The system displays the message "Press DEL to run Setup" during POST.

2.7.3 Security

The Security menu items allow you to change the system security settings. Select an item then press <Enter> to display the configuration options.

Change Supervisor Password

Select this item to set or change the supervisor password. The **Supervisor Password** item on top of the screen shows the default **Not Installed**. After you set a password, this item shows **Installed**.

To set a Supervisor Password:

1. Select the **Change Supervisor Password** item and press <Enter>.
2. From the password box, type a password composed of at least six letters and/or numbers, then press <Enter>.
3. Confirm the password when prompted.

The message **Password Installed** appears after you successfully set your password.

To change the supervisor password, follow the same steps as in setting a user password.

To clear the supervisor password, select the **Change Supervisor Password** then press <Enter>. The message **Password Uninstalled appears**.

If you forget your BIOS password, you can clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section **1.6 Jumper** for information on how to erase the RTC RAM.

After you have set a supervisor password, the other items appear to allow you to change other security settings.

User Access Level [Full Access]

This item allows you to select the access restriction to the Setup items.

[No Access] Prevents user access to the Setup utility.

[View Only] Allows access but does not allow change to any field.

[Limited] Allows changes only to selected fields, such as Date and Time.

[Full Access] Allows viewing and changing all the fields in the Setup utility.

Change User Password

Select this item to set or change the user password. The **User Password** item on top of the screen shows the default **Not Installed**. After you set a password, this item shows Installed.

To set a User Password:

1. Select the **Change User Password** item and press <Enter>.
2. On the password box that appears, type a password composed of at least six letters and/or numbers, then press <Enter>.
3. Confirm the password when prompted.

The message **Password Installed** appears after you set your password successfully.

To change the user password, follow the same steps as in setting a user password.

Clear User Password

Select this item to clear the user password.

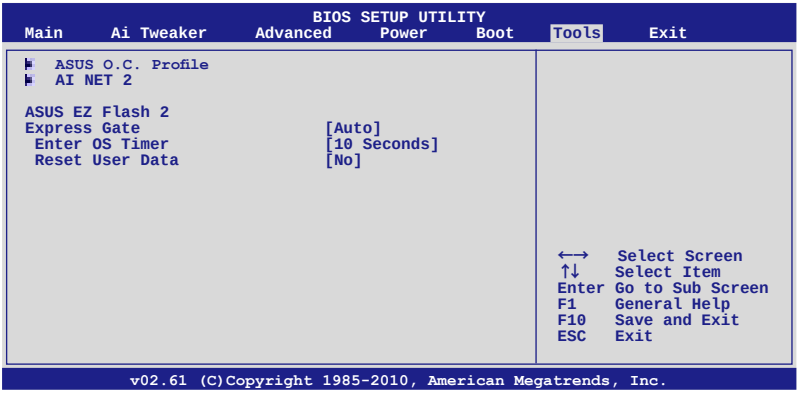
Password Check [Setup]

[Setup] BIOS checks for user password when accessing the Setup utility.

[Always] BIOS checks for user password both when accessing Setup and booting the system.

2.8 Tools menu

The Tools menu items allow you to configure options for special functions. Select an item then press <Enter> to display the submenu.



2.8.1 ASUS O.C. Profile

This item allows you to store or load multiple BIOS settings.

Add Your CMOS Profile.

Allows you to save the current BIOS file to the BIOS Flash. In the **Name** sub-item, type your profile name and press <Enter>, and then choose a profile number to save your CMOS settings in the **Save To** sub-item. You can save eight (8) CMOS profiles.

Load CMOS Profile.

Allows you to load the previous BIOS settings saved in the BIOS Flash. Press <Enter>, and choose a profile to load.

Start O.C. Profile

Allows you to run the utility to save and load CMOS. Press <Enter> to run the utility.

- This function can support devices such as a USB flash disk or a floppy disk with FAT 32/16 format and single partition only.
- DO NOT shut down or reset the system while updating the BIOS to prevent the system boot failure!
- We recommend that you update the BIOS file only coming from the same memory/CPU configuration and BIOS version.
- Only the “xxx.CMO” file can be loaded.

2.8.2 AI NET 2

Check Realtek LAN cable [Disabled]

Enables or disables checking of the Realtek LAN cable during the Power-On Self-Test (POST). Configuration options: [Disabled] [Enabled]

2.8.3 ASUS EZ Flash 2

Allows you to run ASUS EZ Flash 2. When you press **<OK>**, a confirmation message appears. Use the left/right arrow key to select between **[Yes]** or **[No]**, then press **<OK>** to confirm your choice.

2.8.4 Express Gate [Auto]

Allows you to enable or disable the ASUS Express Gate feature. The ASUS Express Gate feature is a unique instant-on environment that provides quick access to the Internet browser and Skype. Configuration options: [Enabled] [Disabled] [Auto]

Enter OS Timer [10 Seconds]

Sets countdown duration that the system waits at the Express Gate's first screen before starting Windows or other installed OS. Choose [Prompt User] to stay at the first screen of Express Gate for user action. Configuration options: [Prompt User] [1 second] [3 seconds] [5 seconds] [10 seconds] [15 seconds] [20 seconds] [30 seconds]

Reset User Data [No]

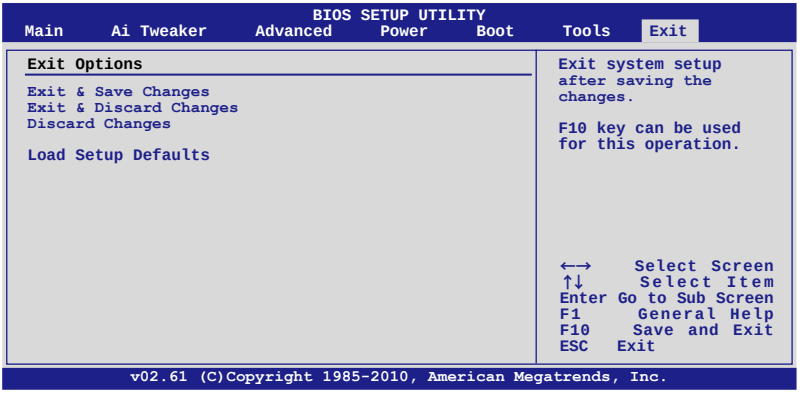
Allows you to clear Express Gate's user data.
Configuration options: [No] [Reset]

When setting this item to [Reset], make sure to save the setting to the BIOS so that the user data will be cleared the next time you enter the Express Gate. User data includes the Express Gate's settings as well as any personal information stored by the web browser (bookmarks, cookies, browsing history, etc.). This is useful in the rare case where corrupt settings prevent the Express Gate environment from launching properly.

The first time wizard will run again when you enter the Express Gate environment after clearing its settings.

2.9 Exit menu

The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.



Pressing <Esc> does not immediately exit this menu. Select one of the options from this menu or <F10> from the legend bar to exit.

Exit & Save Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select **Ok** to save changes and exit.

If you attempt to exit the Setup program without saving your changes, the program prompts you with a message asking if you want to save your changes before exiting. Press <Enter> to save the changes while exiting.

Exit & Discard Changes

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than System Date, System Time, and Password, the BIOS asks for a confirmation before exiting.

Discard Changes

This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select **Ok** to discard any changes and load the previously saved values.

Load Setup Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears. Select **Ok** to load default values. Select **Exit & Save Changes** or make other changes before saving the values to the non-volatile RAM.

ASUS contact information

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Support Fax	+49-2102-9599-11
Online support	support.asus.com

*** EUR 0.14/minute from a German fixed landline; EUR 0.42/minute from a mobile phone.**

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)

Responsible Party Name: **Asus Computer International**

Address: **800 Corporate Way, Fremont, CA 94539.**

Phone/Fax No: **(510)739-3777/(510)608-4555**

hereby declares that the product

Product Name : Motherboard

Model Number : P7H55/USB3

Conforms to the following specifications:

- ☒ FCC Part 15, Subpart B, Unintentional Radiators
- ☐ FCC Part 15, Subpart C, Intentional Radiators
- ☐ FCC Part 15, Subpart E, Intentional Radiators

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Representative Person's Name : **Steve Chang / President**

Signature :

Date : **May. 14, 2010**

EC Declaration of Conformity

We, the undersigned,

Manufacturer:	ASUSTek COMPUTER INC.
Address, City:	No. 150, LI-TE RD., PEITOU, TAIPEI 112, TAIWAN R.O.C.
Country:	TAIWAN
Authorized representative in Europe:	ASUS COMPUTER GmbH
Address, City:	HARKORT STR. 21-23, 40880 RATINGEN
Country:	GERMANY

declare the following apparatus:

Product name :	**Motherboard**
Model name :	**P7H55/USB3**

conform with the essential requirements of the following directives:

☒2004/108/EC-EMC Directive

☒ EN 55022:2006+A1:2007	☒ EN 55024:1998+A1:2001+A2:2003
☒ EN 61000-3-2:2006	☒ EN 61000-3-3:2008
☐ EN 55013:2001+A1:2003+A2:2006	☐ EN 55020:2007

☐1999/5/EC-R &TTE Directive

☐ EN 300 328 V1.7.1(2006-05)	☐ EN 301 489-1 V1.8.1(2008-04)
☐ EN 300 440-1 V1.4.1(2008-05)	☐ EN 301 489-3 V1.4.1(2002-08)
☐ EN 300 440-2 V1.2.1(2008-03)	☐ EN 301 489-4 V1.3.1(2002-08)
☐ EN 301 511 V9.0.2(2003-03)	☐ EN 301 489-7 V1.3.1(2005-11)
☐ EN 301 908-1 V3.2.1(2007-05)	☐ EN 301 489-9 V1.4.1(2007-11)
☐ EN 301 908-2 V3.2.1(2007-05)	☐ EN 301 489-17 V1.3.2(2008-04)
☐ EN 301 893 V1.4.1(2005-03)	☐ EN 301 489-24 V1.4.1(2007-09)
☐ EN 50360:2001	☐ EN 302 326-2 V1.2.2(2007-06)
☐ EN 50371:2002	☐ EN 302 326-3 V1.3.1(2007-09)
☐ EN 62311:2008	☐ EN 301 357-2 V1.3.1(2006-05)
☐ EN 50385:2002	

☒2006/95/EC-LVD Directive

☐ EN 60950-1:2001+A11:2004	☐ EN60065:2002+A1:2006
☐ EN 60950-1:2006	☒ EN 60950-1:2006+A11:2009

☐2009/125/EC-ErP Directive

Regulation (EC) No. 1275/2008	Regulation (EC) No. 278/2009
☐ EN 62301:2005	☐ EN 62301:2005
Regulation (EC) No. 642/2009	
☐ EN 62301:2005	

☒CE marking CE (EC conformity marking)

Position : **CEO**

Name : **Jerry Shen**

Declaration Date: May. 14, 2010

Year to begin affixing CE marking:2010

Signature : _____